

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:14:59 ; Search time 170.563 Seconds
(without alignments)
4233.600 Million cell updates/sec

Title: US-09-806-703A-4

Perfect score: 6812

Sequence: 1 MELAALCRWGLLALLPPGCA.....TFKGTPTAENPEYLGLDVVP 1255

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt_02.*

1: uniprot_sprot.*

2: uniprot_trembl.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6806	99.9	1255	1 ERB2 HUMAN	P04626 homo sapien
2	6295	92.4	1259	2 O18735	O18735 canis famil
3	5988.5	88.1	1259	2 Q8K3F9	Q8K3F9 rattus norv
4	5984.5	88.0	1259	2 Q6P732	Q6P732 rattus norv
5	5984.5	88.0	1259	2 AAH61863	AAH61863 rattus no
6	5994	88.0	1257	1 ERB2 RAT	P06494 rattus norv
7	5984.5	87.9	1254	1 ERB2 MESAU	Q60553 mesocricetu
8	5973.5	87.7	1305	2 Q6ZPE0	Q6ZPE0 mus musculu
9	5973.5	87.7	1305	2 BAC98297	BAC98297 mus muscu
10	4207	61.8	881	2 Q8C0E7	Q8C0E7 m mus muscu
11	3255.5	47.8	711	2 Q80X89	Q80X89 mus musculu
12	3171	46.6	1209	2 Q9QX70	Q9QX70 rattus norv
13	3166	46.5	1210	1 EGFR HUMAN	P00533 homo sapien
14	3166	46.5	1210	2 AAS83109	AAS83109 homo sapi
15	3153.5	46.3	1209	2 Q8M1L8	Q8M1L8 sus scrofa
16	3145	46.2	1210	1 EGFR MOUSE	Q01279 mus musculu
17	3142	46.1	1210	2 Q9EP98	Q9EP98 mus musculu
18	3003.5	44.1	1308	1 ERB4 HUMAN	Q15303 homo sapien
19	3001	44.1	1292	2 Q6UA28	Q6UA28 rattus norv
20	3001	44.1	1292	2 AAQ77349	AAQ77349 rattus no
21	2999	44.0	1308	2 Q6UA29	Q6UA29 rattus norv
22	2999	44.0	1308	2 AAQ77348	AAQ77348 rattus no
23	2988.5	43.9	1191	2 Q7SZF7	Q7SZF7 brachydanio
24	2984	43.8	1308	1 ERB4 RAT	Q62956 rattus norv
25	2979.5	43.7	1191	2 Q6VQA3	Q6VQA3 brachydanio
26	2979.5	43.7	1191	2 AAQ91602	AAQ91602 brachydan
27	2879.5	42.3	1209	2 Q6XJV8	Q6XJV8 xiphophorus
28	2879.5	42.3	1209	2 AAP56673	AAP56673 xiphophorus
29	2751	40.4	1165	2 Q9YH40	Q9YH40 xiphophorus
30	2729.5	40.1	1137	2 Q9W6F6	Q9W6F6 gallus gall
31	2717.5	39.9	1167	1 XMRK_XIPMA	P13388 xiphophorus

32	2440.5	35.8	1342	1 ERB3 HUMAN	P21860 homo sapien
33	2369.5	34.8	1339	1 ERB3 RAT	Q62799 rattus norv
34	2326	34.1	1328	2 P79754	P79754 fugu rubrip
35	212.5	32.5	1305	2 Q8AW81	Q8AW81 brachydanio
36	2063	30.3	1429	2 Q7PPN5	Q7PPN5 anopheles g
37	2049.5	30.1	1340	2 Q7PHU6	Q7PHU6 anopheles g
38	2044.5	30.0	1433	2 Q9BIH9	Q9BIH9 anopheles g
39	2025.5	29.7	435	2 Q6ZMM4	Q6ZMM4 homo sapien
40	2025.5	29.7	435	2 BAD18701	BAD18701 homo eapi
41	2012.5	29.5	1377	2 Q8MLW0	Q8MLW0 drosophila
42	2009	29.5	1325	2 Q6SA16	Q6SA16 drosophila
43	2009	29.5	1325	2 AAR85155	AAR85155 drosophil
44	2009	29.5	1325	2 AAR85225	AAR85225 drosophil
45	2009	29.5	1325	2 AAR85252	AAR85252 drosophil

ALIGNMENTS

RESULT 1

ID	ERB2_HUMAN	STANDARD;	PRT;	1255 AA.
AC	P04626;			
DT	13-AUG-1987 (Rel. 05, Created)			
DT	13-AUG-1987 (Rel. 05, Last sequence update)			
DT	01-OCT-2004 (Rel. 45, Last annotation update)			
DE	Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)			
DE	(p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Tyrosine kinase-type cell surface receptor HER2) (MLN 19).			
GN	Name=ERBB2; Synonyms=HER2, NGL, NEU;			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;			
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			
OX	NCBI_TaxID=9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RP	MEDLINE=86118663; PubMed=3003577;			
RA	Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyajima N.,			
RA	Saito T., Toyoshima K.;			
RT	"Similarity of protein encoded by the human c-erbB-2 gene to			
RT	epidermal growth factor receptor.";			
RL	Nature 319:230-234 (1986).			
RN	[2]			
RN	SEQUENCE FROM N.A., AND VARIANT ALA-1170.			
RX	MEDLINE=86070181; PubMed=2999974;			
RA	Cousens L., Yang-Feng T.L., Liao Y.C., Chen E., Gray A., McGrath J.,			
RA	Seeburg P.H., Libermann T.A., Schlessinger J., Francke U.,			
RA	Levinson A., Ullrich A.;			
RT	"Tyrosine kinase receptor with extensive homology to EGF receptor			
RT	shares chromosomal location with neu oncogene.";			
RL	Science 230:1132-1139 (1985).			
RN	[3]			
RN	SEQUENCE FROM N.A., AND VARIANTS CYS-452; VAL-655 AND ALA-1170.			
RA	Rieder M.J., Livingston R.J., Daniels M.R., Montoya M.A., Chung M.-W.,			
RA	Miyamoto K.E., Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D.,			
RA	Schackwitz W.S., Sherwood J.K., Witrak L.A., Nickerson D.A.;			
RT	"NIH-SNPs, environmental genome project, NIHES ES15478, Department			
RT	of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";			
RL	Submitted (DEC-2002) to the EMBL/GenBank/DBJ databases.			
RN	[4]			
RN	SEQUENCE OF 737-1031 FROM N.A.			
RX	MEDLINE=86016729; PubMed=2995967;			
RA	Samba K., Kanata N., Toyoshima K., Yamamoto T.;			
RT	"A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-			
RT	erbB-1/epidermal growth factor-receptor gene and is amplified in a			
RT	human salivary gland adenocarcinoma.";			
RL	Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501 (1985).			
RN	[5]			
RP	VARIANTS VAL-654 AND VAL-655.			
RX	MEDLINE=93194196; PubMed=8095488;			
RA	Ehsani A., Low J., Wallace R.B., Wu A.M.;			
RT	"Characterization of a new allele of the human ERBB2 gene by allele-			
RT	specific competition hybridization.";			

RL Genomics 15:426-429(1993).
 CC -|- FUNCTION: Essential component of a neurotrophin-receptor complex,
 CC although neurotrophins do not interact with it alone. GF30 is a
 CC potential ligand for this receptor. Not activated by EGF, TGF-
 CC alpha and amphiregulin.
 CC -|- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
 CC tyrosine phosphate.
 CC -|- SUBUNIT: Heterodimer with each of the other ERBB receptors
 CC (potential). Interacts with PRKAP (by similarity).
 CC -|- SUBCELLULAR LOCATION: Type I membrane protein.
 CC -|- PTM: Ligand-binding increases phosphorylation on tyrosine residues
 CC (by similarity).
 CC -|- POLYMORPHISM: There are four alleles due to the variations in
 CC positions 554 and 655. Allele B1 (Ile-654/Ile-655) has a frequency
 CC of 0.782; allele B2 (Ile-654/Val-655) has a frequency of 0.206;
 CC allele B3 (Val-654/Val-655) has a frequency of 0.012.
 CC -|- SIMILARITY: Belongs to the EGF receptor family.
 CC
 CC This SWISS-PROT entry is copyright. It is produced through a collaboration
 CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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 CC use by non-profit institutions as long as its content is in no way
 CC modified and this statement is not removed. Usage by and for commercial
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 CC -----
 DR EMBL; M11767; AAA35808.1; -.
 DR EMBL; M11761; AAA35808.1; JOINED.
 DR EMBL; M11762; AAA35808.1; JOINED.
 DR EMBL; M11763; AAA35808.1; JOINED.
 DR EMBL; M11764; AAA35808.1; JOINED.
 DR EMBL; M11765; AAA35808.1; JOINED.
 DR EMBL; M11766; AAA35808.1; JOINED.
 DR EMBL; M11730; AAA75493.1; -.
 DR EMBL; M12036; AAA35978.1; -.
 DR EMBL; AY208911; AAC18082.1; -.
 DR EMBL; X03363; CAA27060.1; -.
 DR PIR; A24571; A24571.
 DR PDB; 1N8Z; X-ray; C=23-629.
 DR PDB; 1QRI; X-ray; F=654-662.
 DR Genew; HGNC:3430; ERBB2.
 DR MIM; 164870; -.
 DR GO; GO:004325; F:ErbB-3 class receptor binding; TAS.
 DR GO; GO:0004716; F:receptor signaling protein tyrosine kinase . . . ; TAS.
 DR GO; GO:0002823; P:cell proliferation; TAS.
 DR GO; GO:0007167; P:enzyme linked receptor protein signaling pa. . . ; TAS.
 DR GO; GO:0006468; P:protein amino acid phosphorylation; TAS.
 DR InterPro; IPR000494; EGFR_L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin repeat.
 DR InterPro; IPR009030; Growth_recept.
 DR InterPro; IPR011009; Kinase_like.
 DR InterPro; IPR000719; Prot_kinase.
 DR InterPro; IPR001245; Tyr_kinase.
 DR InterPro; IPR008266; Tyr_kinase_AS.
 DR InterPro; IPR004019; VLP_motif.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF00069; Kinase; 1.
 DR Pfam; PF01030; Recept_L_domain; 2.
 DR Pfam; PF02757; YLP; 2.
 DR PRINTS; PR00109; TYRKINASE.
 DR ProDom; PD000001; Prot_kinase; 1.
 DR SMART; SM00261; FU; 3.
 DR SMART; SM00219; TyrKc; 1.
 DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
 DR PROSITE; PSS0011; PROTEIN KINASE DOM; 1.
 DR PROSITE; PS00109; PROTEIN KINASE TVR; 1.
 DR 3D-structure; ATP-binding; Glycoprotein; Multigene family;
 KW Phosphorylation; Polymorphism; Receptor; Signal; Transférase;
 KW Transmembrane; Tyrosine-protein kinase.
 FT SIGNAL 1 21 Potential.
 FT CHAIN 22 1255 Receptor protein-tyrosine kinase erbB-2.
 FT DOMAIN 22 652 Extracellular (Potential).
 FT
 FT TRANSMEM 653
 FT DOMAIN 1255
 FT NP_BIND 726
 FT BINDING 734
 FT ACT_SITE 753
 FT ACT_SITE 845
 FT DISULFID 195
 FT DISULFID 204
 FT DISULFID 199
 FT DISULFID 227
 FT DISULFID 220
 FT DISULFID 224
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 FT DISULFID 255
 FT DISULFID 264
 FT DISULFID 288
 FT DISULFID 299
 FT DISULFID 315
 FT DISULFID 334
 FT DISULFID 511
 FT DISULFID 520
 FT DISULFID 515
 FT DISULFID 531
 FT DISULFID 544
 FT DISULFID 563
 FT DISULFID 567
 FT DISULFID 587
 FT DISULFID 600
 FT DISULFID 626
 FT DISULFID 630
 FT MOD_RES 1139
 FT MOD_RES 1248
 FT CARBOHYD 68
 FT CARBOHYD 124
 FT CARBOHYD 187
 FT CARBOHYD 259
 FT CARBOHYD 530
 FT CARBOHYD 571
 FT CARBOHYD 629
 FT VARIANT 452
 FT VARIANT 654
 FT VARIANT 655
 FT VARIANT 1170
 FT STRAND 25
 FT STRAND 29
 FT TURN 32
 FT HELIX 39
 FT TURN 51
 FT STRAND 55
 FT STRAND 59
 FT TURN 67
 FT HELIX 72
 FT TURN 75
 FT STRAND 79
 FT STRAND 84
 FT TURN 97
 FT STRAND 101
 FT STRAND 108
 FT TURN 109
 FT STRAND 112
 FT STRAND 120
 FT STRAND 136
 FT TURN 143
 FT STRAND 147
 FT STRAND 152
 FT TURN 159
 FT TURN 164
 FT HELIX 169
 FT STRAND 173

||||| 1 MELAAWCRGGLLALLPSPAAGTQVCTGDMKRLIPASPTHLDMLRHLYQCGQVQGNL 60
61 ELYLPTNASLFLQDIQEVQGVYLAHNOVQVPLQRLIRVRGTOLFDNVALAVLDNG 120
61 ELYLPTNASLFLQDIQEVQGVYLAHNOVQVPLQRLIRVRGTOLFDNVALAVLDNG 120
121 DPLANNTPVTGASPGGLRELQRLSTLILKGGVLIQORNQOLCYQDPTILMKDIFHKNNOLA 180
121 DPLGGIPAGAAQGGRELQRLSTLILKGGVLIQORNQOLCYQDPTILMKDIFHKNNOLA 180
181 LTLIDNTRSRACHPCSPMCKGSRGWCSESSDCQSLTRTVACAGCARCKGPLEPTDCCHQC 240
181 LTLIDNTRSRACHPCSPMCKGSRGWCSESSDCQSLTRTVACAGCARCKGPLEPTDCCHQC 240
241 AGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMPNPGRYTFGASCVTACP 300
241 AGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMPNPGRYTFGASCVTSCP 300
301 YNVLSTDVGSCTLVCPHNOEVTAEQGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
301 YNVLSTDVGSCTLVCPHNOEVTAEQGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
361 IQEFACGKIFGSLAFLESFDCGDPASNTAPLOEQLOVFETLEETIGLYIISAWPDSL 420
361 IQEFACGKIFGSLAFLESFDCGDPASNTAPLOEQLOVFETLEETIGLYIISAWPDSL 420
421 DLSVFONQVIRRIHNGAYSITLQGLGSIWGLSRLGSLALIHNNHLCFVHTV 480
421 NLSVFONQVIRRIHNGAYSITLQGLGSIWGLSRLGSLALIHNNHLCFVHTV 480
481 PNDOLFERNHQAHLTANPEDECVGEGACHOLCARGHCWGPPTQCVNCSQFLRGQBC 540
481 PNDOLFERNHQAHLTANPEDECVGEGACHOLCARGHCWGPPTQCVNCSQFLRGQBC 539
541 VEBECRVLQGLPREYVNAHCLCPHPCQCPQNGSVTCFGEADOCVCAHYKPPFFCVARC 600
540 VEBECRVLQGLPREYVNAHCLCPHPCQCPQNGSVTCFGEADOCVCAHYKPPFFCVARC 599
601 PSQVKPDLSPYMTWKPFDEGACQPCPINCSTHSCVDLDKGCAPBQASPLTSIVSAVVG 660
600 PSQVKPDLSPYMTWKPFDEGACQPCPINCSTHSCVDLDKGCAPBQASPLTSIVSAVVG 659
661 ILLAVVLGVVFGILIKRQKIRKTYMRRLQETELVEPLTPSGAMPNOAQRILKETEL 720
660 ILLAVVLGVVFGILIKRQKIRKTYMRRLQETELVEPLTPSGAMPNOAQRILKETEL 719
721 RKVKVLGSGAFGTYYKGIWIPDGENVKIPVAIKVLRNTSPKANKILDEAYVMAGVGP 780
720 RKVKVLGSGAFGTYYKGIWIPDGENVKIPVAIKVLRNTSPKANKILDEAYVMAGVGP 779
781 YVSRLLGICLTSTVQLVTQMLPYGCLLDHVRNHRGLSGQDLLNWCQIAGKMSYLEDYR 840
780 YVSRLLGICLTSTVQLVTQMLPYGCLLDHVRNHRGLSGQDLLNWCQIAGKMSYLEDYR 839
841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETVHADGGKVPKIMWALBILRRFT 900
840 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETVHADGGKVPKIMWALBILRRFT 899
901 HQSDVMSYGVVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPICTIDVVMYMKWM 960
900 HQSDVMSYGVVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPICTIDVVMYMKWM 959
961 IDSECRPRELVSERSWARDPQRFVITQNEIDLGPASPLDSTFYSLLEDDDMGLVDA 1020
960 IDSECRPRELVSERSWARDPQRFVITQNEIDLGPASPLDSTFYSLLEDDDMGLVDA 1019
1021 EYLVPQOQFPCDPAPGAGMWHHRSSRSGGDLTLGLPESEERAPSLAPSEG 1080
1020 EYLVPQOQFPCDPAPGAGMWHHRSSRSGGDLTLGLPESEERAPSLAPSEG 1079
1081 AGSDVFDGDLGMAAGKLSLPHDPSPLQRYSEDPTVPLPSITDGVAPLTCSPQPEYV 1140

Db 1080 AGSDVFDGDLGMAAGKLSLPHDPSPLQRYSEDPTVPLPSITDGVAPLTCSPQPEYV 1139
QY 1141 NOPDVRRPDPSPREGPLPAARPAATLER-----AKT.LSPGKGVVQVDFAGGAVENPE 1195
Db 1140 NOPEVMPQPPPLALEGELPSPRPAATLERPKT.LSPGKGVVQVDFAGGAVENPE 1199
QY 1196 YLTPOGGAPOPHPPAFSPAFDNLVYWDQDPPERGAPSTPKGTPTAENPEYGLGDVVP 1255
Db 1200 YLAPGRAPQPHPPAFSPAFDNLVYWDQDPPERGAPSTPKGTPTAENPEYGLGDVVP 1259
RESULT 3
Q8K3F9 PRELIMINARY; PRT; 1259 AA.
ID Q8K3F9 PRELIMINARY; PRT; 1259 AA.
AC Q8K3F9; PRELIMINARY; PRT; 1259 AA.
DT 01-OCT-2002 (Tremblrel. 22, Created)
DT 01-OCT-2002 (Tremblrel. 22, Last sequence update)
DT 01-MAR-2004 (Tremblrel. 26, Last annotation update)
DE Neu protoconcoprotein.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-BDIX;
RA Watson P.A., Kim K., Chen K.-S., Gould M.N.;
RL Submitted (MAR-2002) to the EMBL/GenBank/DBSJ databases.
DR EMBL; AY116182; HAM50093.1; -.
DR HSSP; P06494; 1N8Y.
DR GO; GO:0016020; C:membrane; IEA.
DR GO; GO:0005524; F:ATP binding; IEA.
DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
DR GO; GO:0016740; P:transferase activity; IEA.
DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
DR InterPro; IPR002048; EF-hand.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin_repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR00719; Prot_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP_motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00219; TyrK; 1.
DR PROSITE; PS00018; EF_HAND; UNKNOWN 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
SQ SEQUENCE 1259 AA; 139101 MW; B724BD5CC3JAB953 CRC64;
Query Match 88.1%; Score 5998.5; DB 2; Length 1259;
Best Local Similarity 87.9%; Pred. No. 1.4e-304;
Matches 1104; Conservative 50; Mismatches 101; Indels 1; Gaps 1;
QY 1 MELAAWCRGGLLALLPSPAAGTQVCTGDMKRLIPASPTHLDMLRHLYQCGQVQGNL 60
Db 4 MELAAWCRGGLLALLPSPAAGTQVCTGDMKRLIPASPTHLDMLRHLYQCGQVQGNL 63
QY 61 ELYLPTNASLFLQDIQEVQGVYLAHNOVQVPLQRLIRVRGTOLFDNVALAVLDNG 120
Db 64 ELYLPTNASLFLQDIQEVQGVYLAHNOVQVPLQRLIRVRGTOLFDNVALAVLDNR 123

Query Match 88.0%; Score 5994.5; DB 2; Length 1259;
 Best Local Similarity 87.8%; Pred. No. 2.2e-304;
 Matches 1103; Conservative 50; Mismatches 102; Indels 1; Gaps 1;

QY 1020 ABEYLVPQGFCDPAPGAGGVMVHRRSSSTRSGGDLTLGLEPSEBAPRSLAPSE 1079
 DB 1024 ABEYLVPQGFCDPAPGAGGVMVHRRSSSTRSGGDLTLGLEPSEBAPRSLAPSE 1083
 QY 1080 GAGSDVDFDGLMGAAGLQSLPHTDPSPLQRYSEDPTVPLPSTGTVAPLTCSPQPEY 1139
 DB 1084 GAGSDVDFDGLMGAAGLQSLPHTDPSPLQRYSEDPTVPLPSTGTVAPLTCSPQPEY 1143
 QY 1140 VNQDVPDPQPPSPREGPLPAARPAAGATLRAKTLSPGKNGVGVDFAGGAVENPEYLT 1199
 DB 1144 VNQDVPDPQPPSPREGPLPAARPAAGATLRAKTLSPGKNGVGVDFAGGAVENPEYLT 1203
 QY 1200 QGGAPAPHPPPAPSPAFDNLVYWDQPPERGAPESTFKGPTTAENPEYGLDVPV 1255
 DB 1204 REGTASPPHPPAPSPAFDNLVYWDQPPERGAPESTFKGPTTAENPEYGLDVPV 1259

RESULT 5
 AAH61863 PRELIMINARY; PRT; 1259 AA.
 AC AAH61863;
 DT 02-MAR-2004 (TRENBLrel. 27, Created)
 DT 02-MAR-2004 (TRENBLrel. 27, Last sequence update)
 DT 02-MAR-2004 (TRENBLrel. 27, Last annotation update)
 DE V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 NCBI_TaxID=10116;
 RN [1]
 SEQUENCE FROM N.A.
 RP TISSUE=Prostate;
 RC MEDLINE=23388257; PubMed=12477932;
 RA Strausberg R.D., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
 RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diachenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Ustin T.B., Toshikiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,
 RA Bosak S.A., McKernan K.J., Malek J.A., Gay L.J., Hulyk S.W.,
 RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fahy J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C., Butterfield Y.S.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
 RA Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
 RA Jones S.J., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length human
 and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
 RN [2]
 SEQUENCE FROM N.A.
 RP TISSUE=Prostate;
 RC Strausberg R.;
 RL Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.
 DR EMBL; BC061863; AAH61863.1; ..
 SQ SEQUENCE 1259 AA; 139071 MW; 10746819C22BE802 CRC64;

Query Match 88.0%; Score 5994.5; DB 2; Length 1259;
 Best Local Similarity 87.8%; Pred. No. 2.2e-304;
 Matches 1103; Conservative 50; Mismatches 102; Indels 1; Gaps 1;

QY 1 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMRLHYQGCQVQGNL 60
 DB 4 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMRLHYQGCQVQGNL 63
 QY 61 ELTYLPANASLSFLQDIQEVQGVYLIHNOVQVPLQRLRIVRGTLQFEDNYALVDNG 120
 DB 64 ELTYLPANASLSFLQDIQEVQGVYLIHNOVQVPLQRLRIVRGTLQFEDNYALVDNG 123

Query Match 88.0%; Score 5994.5; DB 2; Length 1259;
 Best Local Similarity 87.8%; Pred. No. 2.2e-304;
 Matches 1103; Conservative 50; Mismatches 102; Indels 1; Gaps 1;

QY 1 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMRLHYQGCQVQGNL 60
 DB 4 MELAAACRWGLLIALLPPGAASTQVCTGDMKRLPASPETHLDMRLHYQGCQVQGNL 63
 QY 61 ELTYLPANASLSFLQDIQEVQGVYLIHNOVQVPLQRLRIVRGTLQFEDNYALVDNG 120
 DB 64 ELTYLPANASLSFLQDIQEVQGVYLIHNOVQVPLQRLRIVRGTLQFEDNYALVDNG 123
 QY 121 DPLNNTTPVT-GASPGGLRELQRLSLEILKGGVLIQRPOLCYQDYLKWDIFHNKQL 179
 DB 124 DPQDNVAASPTGRTPEGLRELQRLSLEILKGGVLIQRPOLCYQDYLKWDIFHNKQL 183
 QY 180 ALTLIDTNRSRACHPCSPCKSGSRGWESSEDCOSLTRVVCAGGACRCKGLPTCCHEQ 239
 DB 184 APVDIDTNRSRACHPCSPCKSGSRGWESSEDCOSLTRVVCAGGACRCKGLPTCCHEQ 243
 QY 240 CAAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMNPPEGRTYFGASCVTAC 299
 DB 244 CAAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMNPPEGRTYFGASCVTAC 303
 QY 300 PYNLSTVGSCTLVCPLNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVAVTSA 359
 DB 304 PYNLSTVGSCTLVCPLNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVAVTSA 363
 QY 360 NIOEFAGCKIFGSLAFLESFGDPSANTAPLOPELOQVFEITGLVLIISAWPDSL 419
 DB 364 NVQEFAGCKIFGSLAFLESFGDPSANTAPLOPELOQVFEITGLVLIISAWPDSL 423
 QY 420 PDLVSFONQVIRGRIHNGAYSILTLQGLISGLRLSRELGLALHNNHLCFVHT 479
 DB 424 RDLVSFONQVIRGRIHNGAYSILTLQGLISGLRLSRELGLALHNNHLCFVHT 483
 QY 480 VPMDQLFRNPHQALLHTANPEDECVEGGLACHQLCARHCWGPQTQVNCQSFIRGQE 539
 DB 484 VPMDQLFRNPHQALLHTANPEDECVEGGLACHQLCARHCWGPQTQVNCQSFIRGQE 543
 QY 540 CVEECRVGLPREYVNAHCLPCHPECPQNGSVTCFGEADQVACAHYKDPPECVAR 599
 DB 544 CVEECRVGLPREYVNAHCLPCHPECPQNGSVTCFGEADQVACAHYKDPPECVAR 603
 QY 600 CPSCGVKPDLSYMPITKFPDEEGACQPCPINCTHSCVDLDDKGPASORASPLTSIVAVV 659
 DB 604 CPSCGVKPDLSYMPITKFPDEEGACQPCPINCTHSCVDLDDKGPASORASPLTSIVAVV 663
 QY 660 GILLVVLGVVFGILLIKRQKIRKYTWRLLOETELVEPLTPSGAMPNQAQWRLIKETE 719
 DB 664 GILLVVLGVVFGILLIKRQKIRKYTWRLLOETELVEPLTPSGAMPNQAQWRLIKETE 723
 QY 720 LRKVKVLGSGAGFYVYGIWIPDGENVKIPVAIKVLRNTSPKANKELDEAYVMAGVGS 779
 DB 724 LRKVKVLGSGAGFYVYGIWIPDGENVKIPVAIKVLRNTSPKANKELDEAYVMAGVGS 783
 QY 780 PYVSRLLGICLTSTVQLVTLQMPYGCCLLDHVRNHRGLSGDILLNWCQIAKMSYLEDV 839
 DB 784 PYVSRLLGICLTSTVQLVTLQMPYGCCLLDHVRNHRGLSGDILLNWCQIAKMSYLEDV 843
 QY 840 RLVRDLAARNVLYKSNHVKITDGLARLLDIDETVHADGGKVPKKNWALSILRRRF 899
 DB 844 RLVRDLAARNVLYKSNHVKITDGLARLLDIDETVHADGGKVPKKNWALSILRRRF 903
 QY 900 THQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPCTIDVYMWKCV 959
 DB 904 THQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPCTIDVYMWKCV 963
 QY 960 MIDSECRPRFRELVSFSEFMRDQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDGLVD 1019
 DB 964 MIDSECRPRFRELVSFSEFMRDQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDGLVD 1023


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Db      1141 YVQSEVQPPPLTPEGLPPVPAGATLSPKNGVVDVFAFGAVENPEYLV 1200
Qy      1199 POGGAAPQPPPPAFSAFNLYYWDODPPERGAPPSTFKTPTAENPEYLGIDVPV 1255
Db      1201 PREGTASPPHSPAFSAFNLYYWDQNSSEQGGPPPSNFEGTPTAENPEYLGIDVPV 1257

RESULT 7
ERB2_MESAU
ID_ERB2_MESAU STANDARD; PRT: 1254 AA.
AC Q0553;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2).
GN Name-ERB2; Synonyms=NEU;
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Nerve;
RX MEDLINE=94193007; PubMed=7908275;
RA Nakamura T.; Uehijima T.; Ishizaka Y., Nagao M., Arai M., Yamazaki Y.,
RT Ichikawa T.;
RL "Cloning and activation of the Syrian hamster neu proto-oncogene.";
    Gene 140:251-255(1994).
CC -1- FUNCTION: Essential component of a neurotrophin-receptor complex,
    although neurotrophins do not interact with it alone. gp30 is a
    potential ligand for this receptor. Not activated by EGF, TGF-
    alpha and amphiregulin (By similarity).
CC -1- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
    tyrosine phosphate.
CC -1- SUBUNIT: Heterodimer with each of the other ERBB receptors
    (Potential). Interacts with PRKCAPB (By similarity).
CC -1- SUBCELLULAR LOCATION: Type I membrane protein.
CC -1- PTM: Ligand-binding increases phosphorylation on tyrosine
    residues.
CC -1- SIMILARITY: Belongs to the EGF receptor family.
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
    between the Swiss Institute of Bioinformatics and the EMBL outstation -
    the European Bioinformatics Institute. There are no restrictions on its
    use by non-profit institutions as long as its content is in no way
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    entities requires a license agreement (see http://www.isb-sib.ch/announce/
    or send an email to license@isb-sib.ch).
CC -----
DR ENBL; D16295; BAA03801.1; -.
DR PIR; I48161; I48161.
DR HSSP; P06494; INBY.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; VLP_motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Pkinase; 1.
DR Pfam; PF01030; Recep_L domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00219; TyTKC; 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

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DR PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Disease mutation; Glycoprotein; Multigene family;
KW Phosphorylation; Proto-oncogene; Receptor; Signal; Transferase;
KW Transmembrane; Tyrosine-protein kinase.
KW SIGNA 1 21 Potential.
FT CHAIN 22 1254 Receptor protein-tyrosine kinase erbB-2.
FT DOMAIN 22 652 Extracellular (Potential).
FT TRANSMEM 653 675 Potential.
FT DOMAIN 676 1254 Cytoplasmic (Potential).
FT DOMAIN 158 368 Cys-rich.
FT DOMAIN 472 644 Cys-rich.
FT DOMAIN 720 987 Protein kinase.
FT NP_BIND 726 734 ATP (By similarity).
FT BINDING 753 753 ATP (By similarity).
FT ACT_SITE 845 845 By similarity.
FT DISULFID 195 204 By similarity.
FT DISULFID 199 212 By similarity.
FT DISULFID 236 244 By similarity.
FT DISULFID 240 252 By similarity.
FT DISULFID 255 264 By similarity.
FT DISULFID 268 295 By similarity.
FT DISULFID 299 311 By similarity.
FT DISULFID 315 331 By similarity.
FT DISULFID 334 338 By similarity.
FT DISULFID 511 520 By similarity.
FT DISULFID 515 528 By similarity.
FT DISULFID 531 540 By similarity.
FT DISULFID 544 560 By similarity.
FT DISULFID 563 576 By similarity.
FT DISULFID 567 584 By similarity.
FT DISULFID 587 596 By similarity.
FT DISULFID 600 623 By similarity.
FT DISULFID 626 634 By similarity.
FT DISULFID 630 642 By similarity.
FT MOD_RES 1139 1139 Phosphotyrosine (by autocatalysis) (By
    similarity).
FT MOD_RES 1247 1247 Phosphotyrosine (by autocatalysis) (By
    similarity).
FT CARBOHYD 68 68 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 125 125 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 187 187 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 259 259 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 530 530 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 571 571 N-linked (GlcNAc...) (Potential).
FT CARBOHYD 629 629 N-linked (GlcNAc...) (Potential).
FT VARIANT 658 658 V -> E (in oncogenic NEU).
FT VARIANT 659 659 V -> E (in oncogenic NEU).
SQ SEQUENCE 1254 AA; 138252 MW; 974C3791C21F2BE1 CRC64;

Query Match 87.9%; Score 5984.5; DB 1; Length 1254;
Best Local Similarity 87.8%; Pred. No. 7.3e-304;
Matches 1099; Conservative 58; Mismatches 97; Indels 1; Gaps 1;

Qy 1 MELAALCRWGLIALLPAGASTQVCTGDMKRLPASPEHLDMLRHLVYQGQVQGNL 60
Db 1 MELAANGWGLLLALLSPGASGTQVCTGDMKRLPASPEHLDIVRHLVYQGQVQGNL 60
Qy 61 ELTYLPNASLSFLQDIQEVQGYVLIHQNQVQVPLQRLRIVRGTLQFEDNYALAVLDNG 120
Db 61 ELTYLPANATLSFLQDIQEVQGYMLIAHSQVRHVPQLRLRIVRGTLQFEDKYALAVLDNR 120
Qy 121 DPLNNTTPTVGASPGGLRELQLRLSLTEILKGGVLIQNRNPOLCYQDTILKWDIFHKNNQLA 180
Db 121 DPLDNVTATGTPTPEGLRELQLRLSLTEILKGGVLIQNRNPOLCYQDTIVLWDFRKNQLA 180
Qy 181 LTLIDNRSRACHPCSPMCKGRSCWESSEDCOSLRTTVCAGGCARCKGPLPTDCCHQC 240
Db 181 PVDIDNRSRACHPCPCAPACKNHCWASPEDCQTLTGTTAPRAVPAARALPTDCCHQC 240
Qy 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300

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QY 301 YNYLSTDVGSCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLQWEHLREVRVAVTSAN 360
DB 301 YNYLSTEVSCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLQWEHLRGARATSAN 360
QY 361 IQEFACKKIFGSLAFPLPSFDGDPASNTAPLOPEQLQVFETLEEITGYLYISAMPDLSLP 420
DB 361 IQEFACKKIFGSLAFPLPSFDGDPASNTAPLOPEQLQVFETLEEITGYLYISAMPDLSLH 420
QY 421 DLSVFONLQVIRGIIHNGAYSLTLOGLGTSWGLHSRLSGLALIHNNHLCRVHTV 480
DB 421 DLSVFONLQVIRGIIHNGAYSLTLOGLGTSWGLHSRLSGLALIHNNHLCRVHTV 480
QY 481 PWDQLFNPHQALHTANPEDECVGEGLACHOLCARGHCWGPGPTQCVNCSOFLRGQEC 540
DB 481 PWDQLFNPHQALHTANPEDECVGEGLACHOLCARGHCWGPGPTQCVNCSOFLRGQEC 540
QY 541 VECRVLOGLPREYVNAHCLPCHPECQPNQSVTCFGEADQCAVCAHYKOPPPFCVAC 600
DB 541 VKECRVWGLPREYVNGKCLPCHPECQPNQSVTCFGEADQCAVCAHYKOPPPFCVAC 600
QY 601 PSQVKPDLSPYTWKPEDEGACQPCINCHTSCVDLDDKCPAERASPLTSIVSAVVG 660
DB 601 PSQVKPDLSPYTWKPEDEGACQPCINCHTSCVDLDDKCPAERASPLTSIVSAVVG 660
QY 661 ILLVVLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAQMRILKETEL 720
DB 661 ILLVVLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAQMRILKETEL 720
QY 721 RKVKVLGSGAFGVYKGIWIPDGENVKI PVAIKVLRNTPSKANKEILDEAYVMAGVGP 780
DB 721 RKVKVLGSGAFGVYKGIWIPDGENVKI PVAIKVLRNTPSKANKEILDEAYVMAGVGP 780
QY 781 YVSRLLGICLTSVQLVTQMPYGCILLDVRNHRGLSGODLLNWCNQIAGKMSYLEDYR 840
DB 781 YVSRLLGICLTSVQLVTQMPYGCILLDVRNHRGLSGODLLNWCNQIAGKMSYLEDYR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETVHADGGKVPKKNWALESLIRRRFT 900
DB 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETVHADGGKVPKKNWALESLIRRRFT 900
QY 901 HQSDVMSYGVYVWELMTFGAKPYDGI PAREIPDLLEKGERLPPOPICTIDVYMWKCM 960
DB 901 HQSDVMSYGVYVWELMTFGAKPYDGI PAREIPDLLEKGERLPPOPICTIDVYMWKCM 960
QY 961 IDSECEPRRELVSERSRARDPQRFVITQNEIDLGPASPLDSTFYRSLLDDDDMGDLVDA 1020
DB 961 IDSECEPRRELVSERSRARDPQRFVITQNEIDLGPASPLDSTFYRSLLDDDDMGDLVDA 1020
QY 1021 EYLVVPOQGFPCDPAPAGGMVHRRSSSTRSGGDLTLGLEPSEERAPRSLAPSEG 1080
DB 1021 EYLVVPOQGFPCDPAPAGGMVHRRSSSTRSGGDLTLGLEPSEERAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGKLOSLTHDFPSLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140
DB 1081 AGSDVFEGLGMCATKGQPSISPRDLSPQLQRYSEDPTLPLTETDGYVAPLTCSPQPEYV 1140
QY 1141 NQDVPTRPQPPSPREGPLPAARPAAGATLERAKTLPNGKNGVVDVPAFGGAVENPEYLTQ 1200
DB 1141 NQDVPTRPQPPSPREGPLPAARPAAGATLERAKTLPNGKNGVVDVPAFGGAVENPEYLTQ 1200
QY 1201 GGAAPQHPPPAFSPAFDNLVYWDQPPERGAPEPSTFKGTPTAENPEYLGLDVVP 1255
DB 1201 GGSASQPH-PPALCPAFDNLVYWDQPPERGAPEPSTFKGTPTAENPEYLGLDVVP 1254

RESULT 8

Q6ZPEO
ID Q6ZPEO PRELIMINARY; PRT; 1305 AA.
AC Q6ZPEO;
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)

DE MKIAA3023 protein (Fragment).
GN Name=MKIAA3023;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Embryonic tail;
RX PubMed=14621295;
RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Koseki H., Hiraoka S.,
Saga Y., Nagase T., Ohara O., Koga H.;
RT "Prediction of the coding sequences of mouse homologues of KIAA gene:
III. the complete nucleotide sequences of 500 mouse KIAA-homologous
cDNAs identified by screening of terminal sequences of cDNA clones
randomly sampled from size-fractionated libraries.";
RL DNA Res. 10:167-180(2003).
DR EMBL; AK129487; BAC98297.1; -.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow fac recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot kinase.
DR InterPro; IPR002290; Ser_thr_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Pkinase; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00220; S_TKc; 1.
DR SMART; SM00219; TyrKc; 1.
DR PROSITE; PS00107; PROTEIN KINASE_ATP; 1.
DR PROSITE; PS00111; PROTEIN KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase.
FT NON_TER 1
FT SEQUENCE 1305 AA; 143507 MW; A51D897408521860 CRC64;
Query Match 87.7%; Score 5973.5; DB 2; Length 1305;
Best Local Similarity 87.5%; Pred. No. 2.9e-303;
Matches 1099; Conservative 56; Mismatches 100; Indels 1; Gaps 1;
QY 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLKRLPASPEHLDMLRHLYQGCVVQGNL 60
DB 50 MELAAWCRWGLTALLSPGAAGTQVCTGTDMLKRLPASPEHLDMLRHLYQGCVVQGNL 109
QY 61 ELYLPNTASLFLQDIQEVQGVLIHNRVQVPLQRLIRVGTOLFFDNVALAVLDNG 120
DB 110 ELYLPANASLFLQDIQEVQGVLIHNRVQVPLQRLIRVGTOLFFDNVALAVLDNR 169
QY 121 DPLNN-TTPVTGASPGRLQLRLSLTEILKGGVLIQRPOLCYQDTILFKDIFHKNQL 179
DB 170 DPLDNNVTAAAPRTPGRLQLRLSLTEILKGGVLIQRPOLCYQDMVLKDWLRKNNQL 259
QY 180 AULTIDTNRSRACHPCSPCKGSRWGESSEBCQSILTRTVAGGCARCKGPLPTDCHEQ 239
DB 230 APVMDTNRSRACPPCAPCTCKDNHCWGESPEDCQILTGITCTSGCARCKGRLPTDCHEQ 289
QY 240 CAAGCTGPKHSDCLACLHNSGICELHCPALVTYNTDTFESMPNPEGYTFGASCVTAC 299
DB 290 CAAGCTGPKHSDCLACLHNSGICELHCPALVTYNTDTFESMPNPEGYTFGASCVTTC 349
QY 300 PYNLYSTDVGSCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLQWEHLREVRVAVTS 359

350	QY	DB	PNYLSTVGSC	TLVCPNNQEVTHADGTQRCCKSPCAGVCYGLGMEHRLGARAITSD	409
360	QY	DB	NIQBPAGCKKIFGSLAF	PESFDGDPASNTAPLOEQLOVPETLEEITGYLIYSAWPDSL	419
410	QY	DB	NIQBPAGCKKIFGSLAF	PESFDGPNSSGVAPLKEHLQVETLEEITGYLIYSNWPSEF	469
420	QY	DB	PDLVSFQNLQVIRGRIL	UNGAYSULTQGLGTSWGLRSRLRELGSGLALIHNTHLCFVHT	479
470	QY	DB	QDLSVFQNLQVIRGRIL	HDGAYSULTQGLGTHSLGRSLRELGSGLALIHRNTHLCPVNT	529
480	QY	DB	VPDQLFRNPHOALLHTANR	PEDECVGSLACHOLCARGHGWGCPQTCVNCOSQFLRQOE	539
530	QY	DB	VPDQLFRNPHOALLHNS	NRPEEACGLEGLVCNSLCARGHGWGCPQTCVNCOSQFLRQOE	589
540	QY	DB	CVEECRLVQLPREYVNA	RHCLPCHPECQPNQSGVTCFPGPADQCVACAHYKDPFCVAV	599
590	QY	DB	CVEECRVWKGLPREYVR	GKHCLPCHPECQPNSSSETCYGSEADQCEACHYKDSSCVAV	649
600	QY	DB	CPSGVKPDLSPYMPIW	KPDPDESGACQPCPINCTHSCVDLDDKGCSPAQRASPLTISVAV	659
650	QY	DB	CPSGVKPDLSPYMPIW	KYKYPDEBGIQPCPCINCTHSCVDLDDKGCSPAQRASPVTFIATV	709
660	QY	DB	GILLVVLGVVFGILLIK	ERQOKIRKYTWRRLLQETELVEPLTPSGAMPNQOMILKETE	719
710	QY	DB	GVLFLIIIVVIGILIK	RRQOKIRKYTWRRLLQETELVEPLTPSGAVENQOMILKETE	769
720	QY	DB	LRKVKVLGSGAFGYKGI	WIPDGENVKIPVAIKVLRENTSPKANKELDBEAYVMAGVS	779
770	QY	DB	LRKVLGSGAFGYKGI	WIPDGENVKIPVAIKVLRENTSPKANKELDBEAYVMAGVS	829
780	QY	DB	PYVSRLLGICLTSTVQL	VTQMPYGCLLDHVRENRGLSGODLLNWCMIAGMSYLEDV	839
830	QY	DB	PYVSRLLGICLTSTVQL	VTQMPYGCLLDHVREHGRGLSGODLLNWCVOIAGMSYLEEV	889
840	QY	DB	RLVHRDLAARNVLKSP	NHVKITDFGLARLDDIETEHADGGKVPKWMALESIILRRF	899
890	QY	DB	RLVHRDLAARNVLKSP	NHVKITDFGLARLDDIETEHADGGKVPKWMALESIILRRF	949
900	QY	DB	THQSDVMSYGVTVWEL	MTFGAKPYDGIIPAREIPDLLEKGERLPOPPICITDVMYMKWC	959
950	QY	DB	THQSDVMSYGVTVWEL	MTFGAKPYDGIIPAREIPDLLEKGERLPOPPICITDVMYMKWC	1009
960	QY	DB	MIDSECRPRPRELVSE	FSRMDARPQFVVIQNEBGLGPASPLDSTFYRSLLEDDDMGLVD	1019
1010	QY	DB	MIDSECRPRPRELVSE	FSRMDARPQFVVIQNEBGLPSSPMDSTFYRSLLEDDDMGLVD	1069
1020	QY	DB	ABEYLVPOQGFCDPAP	AGCQVHHRHSSTSGGGDLTLGLEPSEEEAPRSLPASE	1079
1070	QY	DB	ABEYLVPOQGFCDPAP	LGSTAHRRHRSARSGGGELTLGLEPSEEPRSLPASE	1129
1080	QY	DB	GAGSDVPDGLMGMAAK	GLQSLPTHDPSPLOQYSEDPVPLPSTDGVVAPLTCSPQPEY	1139
1130	QY	DB	GAGSDVPDGLUAVGT	KGLQSLPHDUSPLQYSEDPFLPUPPETDGVVAPLACSPQPEY	1189
1140	QY	DB	VNQPDVVRPQPSPRE	GLPAPARPAGATLERAKTLSPGKNGVVKQVFAFGGAVENPEYLT	1199
1190	QY	DB	VNQPEVRPQSLTPE	GPPPIRPAAGATLERPKTLPKNGVVKQVFAFGGAVENPEYLA	1249
1200	QY	DB	QGGAAPOPHPPAPSP	AFDNLVYWDQDPPERGAPSTFKGPTTAENPEYLGLDVVP	1255
1250	QY	DB	RAGTASQPHSPAPSP	AFDNLVYWDQNSQCGPPPTFEGPTTAENPEYLGLDVVP	1305

RESULT 9

ID	BAC98297	PRELIMINARY;	PRT; 1305 AA.
AC	BAC98297;		
DT	02-MAR-2004	(T-EMBLrel. 27, Created)	
DT	02-MAR-2004	(T-EMBLrel. 27, Last sequence update)	
DT	02-MAR-2004	(T-EMBLrel. 27, Last annotation update)	
DE	MKIAA3023	protein (fragment).	
DE	MKIAA3023.		
GN	Mus musculus		
OS	Mus musculus (Mouse).		

780 PYVSRLLGICLTSTVLTQMPYGCGLLHVHNRGRGLSGDQLLWNCWQIAKMGSLYEDV 839
830 PYVSRLLGICLTSTVLTQMPYGCGLLHVHNRGRGLSGDQLLWNCWQIAKMGSLYEDV 889
840 RLVRDLAARNVLKSPNVHKITDFGLARLLDIDETEVHADGKVPKIKMALESILRRRF 899
890 RLVRDLAARNVLKSPNVHKITDFGLARLLDIDETEVHADGKVPKIKMALESILRRRF 949
900 THQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPQPPICITIDYVIMVKW 959
950 THQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPQPPICITIDYVIMVKW 1009
960 MIDSECRPRFRELVSFSEMRARDPQFVVIQNEIDGAPSLSTFVRSLLLEDDMGDLVD 1019
1010 MIDSECRPRFRELVSFSEMRARDPQFVVIQNEIDGAPSLSTFVRSLLLEDDMGDLVD 1069
1020 ABEYLVPQGGFFCPDPAPGAGGMVHRHRSSTSRSGGDLTLGLEPSEEEAPRSLAPSE 1079
1070 ABEYLVPQGGFFCPDPALGTGTSTHRRHRSSTSRSGGDLTLGLEPSEEEAPRSLAPSE 1129
1080 GAGSDVFDGDLGMAAGLQSLTHDPSPLQRYSEDPTVPLPSETDGYVAPITCSPQPY 1139
1130 GAGSDVFDGDLGMAAGLQSLTHDPSPLQRYSEDPTVPLPSETDGYVAPITCSPQPY 1189
1140 VNQPDVVRPQPPSPREGPLPAARAGATILBRKTLSPKNGVVKDVFAGGAVENPEYLP 1199
1190 VNQPDVVRPQPPSPREGPLPAARAGATILBRKTLSPKNGVVKDVFAGGAVENPEYLP 1249
1200 QCGAAPPQPPPPAFSPAFDNLVYWDQDPPPERGAPPSTFKGTPTAENPEYLGDLVPV 1255
1250 RAGTASQPPSPAFSPAFDNLVYWDQDPPPERGAPPSTFKGTPTAENPEYLGDLVPV 1305

RESULT 10
Q8COE7 PRELIMINARY; PRT; 881 AA.
ID Q8COE7
AC Q8COE7
DT 01-MAR-2003 (TrEMBLrel. 23, Created)
DT 01-MAR-2003 (TrEMBLrel. 23, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Mus musculus 13 days embryo male testis cDNA, RIKEN full-length
DE enriched library, clone:6030449F08 product:v-erb-b2 erythroblastic
DE leukemia viral oncogene homolog 2, neuro/glioblastoma derived oncogene
DE homolog (avian), full insert sequence. (Fragment).
DE Name=Erbb2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=9279253; PubMed=10349636;
RA Carninci P., Hayashizaki Y.;
RT "High-efficiency full-length cDNA cloning";
RL Meth. Enzymol. 303:19-44(1999).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=21085660; PubMed=11217851;
RA RIKEN FANTOM Consortium;
RT "Functional annotation of a full-length mouse cDNA collection";
RL Nature 409:685-690(2001).
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RA The FANTOM Consortium;
RT "Analysis of the mouse transcriptome based on functional annotation of
60,770 full-length cDNAs";
RL Nature 420:563-573(2002).
RN [4]
RP SEQUENCE FROM N.A.

RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=20499374; PubMed=11042159;
RA Carninci P., Shibata Y., Hayatsu M., Sugahara Y., Shibata K., Itoh M.,
Kanno H., Okazaki Y., Muramatsu N., Hayashizaki Y.;
RT "Normalization and subtraction of cap-trapper-selected cDNAs to
prepare full-length cDNA libraries for rapid discovery of new genes";
RL Genome Res. 10:1617-1630(2000).
RN [5]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RX MEDLINE=20530913; PubMed=11076861;
RA Shibata K., Itoh M., Aizawa K., Nishida K., Kitsuana T., Tashiro H., Itoh M.,
Sumi N., Ishii Y., Nakamura S., Hazama M., Nishine T., Harada A.,
Yamamoto R., Matsumoto H., Sakaguchi S., Ikegami T., Kashiwagi K.,
Fujiwaka S., Inoue K., Togawa Y., Izawa M., Ohara E., Watahiki M.,
Yoneda Y., Ishikawa T., Ozawa K., Tanaka T., Matsuura S., Kawai J.,
Okazaki Y., Muramatsu M., Inoue Y., Kira A., Hayashizaki Y.;
RT "RIKEN integrated sequence analysis (RISA) system-384-format
sequencing pipeline with 384 multicapillary sequencer";
RL Genome Res. 10:1757-1771(2000).
RN [6]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Testis;
RA Adachi J., Aizawa K., Akimura T., Arakawa T., Bono H., Carninci P.,
Fukuda S., Furuno M., Hanagaki T., Hara A., Hashizume W.,
Hayashida K., Hayatsu N., Hiramoto K., Hiraoka T., Hirozane T.,
Hori F., Imotani K., Ishii Y., Itoh M., Kagawa I., Kasukawa T.,
Kato H., Kawai J., Kojima Y., Kondo S., Konno H., Kouda M., Koya S.,
Kurihara C., Matsuyama T., Miyazaki A., Murata M., Nakamura M.,
Nishi K., Nomura K., Numazaki R., Ohno M., Ohsato N., Okazaki Y.,
Saito R., Saitoh H., Sakai C., Sakai K., Sakazume N., Sano H.,
Sasaki D., Shibata K., Shinagawa A., Shiraki T., Sogabe Y., Tagami M.,
Tagawa A., Takahashi F., Takaku-Akai H., Tanaka Y., Tanaka T.,
Tomaru A., Toya T., Yasunishi A., Muramatsu M., Hayashizaki Y.;
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
DR EMBL; AK031542; BAC27442.1; -.
DR HSSP; P06494; 1N8Y.
DR MGD; MGI:95410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Growth factor receptor.
DR InterPro; IPR01009; Kinase like.
DR InterPro; IPR000719; Protein kinase.
DR InterPro; IPR01245; Tyrosine kinase.
DR InterPro; IPR008266; Tyrosine kinase.
DR InterPro; IPR004019; YLP motif.
DR Pfam; PF00069; Kinase; 1.
DR Pfam; PF01030; Receptor domain; 1.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Protein kinase; 1.
DR SMART; SM00261; FU; 2.
DR SMART; SM00219; Tyrc; 1.
DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
DR PROSITE; PS00111; PROTEIN KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.
FT NON TER 1
SQ SEQUENCE 881 AA; 97500 MW; 5D5042BE9F80836 CRC64;
Query Match 61.8%; Score 4207; DB 2; Length 881;
Best Local Similarity 88.1%; Pred. No. 2.8e-211;
Matches 776; Conservative 40; Mismatches 65; Indels 0; Gaps 0;
QY 375 AFLPESFDGDPASNTAPLOPEQLQVETLEETIGLYISAWPDSPLSVFQNLQVIRG 434
DB 1 AFLPESFDGDPNSGVAFLAPLQVETLEETIGLYISAWPDSPLSVFQNLQVIRG 60
QY 435 ILHNGAYSLTLQGLGISWGLSLRLGSLALIHHTHLCPVHTVPDQLFRNPQALL 494


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Db 61 ILHDGAYSLTQGIHSLGRLSRELDGLALHNRTHLCFVNTVPWDQLFRPHQALL 120
Qy 495 HTANRPDECEVGEGLACHQLCARHCWGPGTQCNCVSQFLRGQECVEECRVQLGPREY 554
Db 121 HSGNRPPEACGLEGLVNSLCARHCWGPGTQCNCVSQFLRGQECVEECRVWKGPREY 180
Qy 555 VNARHCLPCHPECPQNGSVTCFGEADQCACAHYKDPFPCVACRCPGKPDLSYMPIW 614
Db 181 VRGKHCLPCHPECPQNSSETCYGSEADQCEACAHYKDSVCVACRCPGKPDLSYMPIW 240
Qy 615 KFPDEGACQPCPINCCHSCVDLDDKCPAEORASPTISVASVGLLVVLVGVGIL 674
Db 241 KYPDEEGICQPCPINCCHSCVDLDDKCPAEORASPTISVASVGLLVVLVGVGIL 300
Qy 675 IKRRQKIRKYTMRLQETELVEPLTPSGAMPNQAQMRILKTELAKVKVLGSGAGTV 734
Db 301 IKRRQKIRKYTMRLQETELVEPLTPSGAVPQAQMRILKTELAKVKVLGSGAGTV 360
Qy 735 YKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTV 794
Db 361 YKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSRLLGICLTSTV 420
Qy 795 QLVTLMPYGLLDHVRNKRIGSQDLNWKQIAKMSYLEVDVRLVHRDLAARNVLVK 854
Db 421 QLVTLMPYGLLDHVRNKRIGSQDLNWKQIAKMSYLEVDVRLVHRDLAARNVLVK 480
Qy 855 SPNHVKITDCLARLLDIDETEHADGKVPKIKMALESILRRRFTHQSDVWSVGVTVWE 914
Db 481 SPNHVKINDFLARLLDIDETEHADGKVPKIKMALESILRRRFTHQSDVWSVGVTVWE 540
Qy 915 LMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITIDVYIMVKWCMIDSECRPRFRLVS 974
Db 541 LMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITIDVYIMVKWCMIDSECRPRFRLVS 600
Qy 975 EFSMARDPQRFVVIQNEIDGPASPLDSTFYRSLEDDDMGLVDAAEYLVPQGGFCPD 1034
Db 601 EFSMARDPQRFVVIQNEIDGPASPLDSTFYRSLEDDDMGLVDAAEYLVPQGGFCPD 660
Qy 1035 PAPGAGMVRHRRSSSTRSGGDLTGLRPSBEARSLPASEGAGSDVFDGLMGGA 1094
Db 661 PALGTGTARRHRRSSARSGGSLTGLRPSBEARSLPASEGAGSDVFDGLMGGA 720
Qy 1095 AKGLQSLTHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPVYVQPDVVRPQPSPRE 1154
Db 721 TKGLQSLPHDLSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPVYVQPDVVRPQPSPRE 780
Qy 1155 GPUPAARPAAGATLERAKTLSPGKNGVVKVDFAFGAVENPEYLTPOGGAAPQHPHPPAFS 1214
Db 781 GPUPPIRPAAGATLERAKTLSPGKNGVVKVDFAFGAVENPEYLTPOGGAAPQHPHPPAFS 840
Qy 1215 PAFDNLVYWDQDPPERCAPSTFKGTPTAENPEYILGLDVPV 1255
Db 841 PAFDNLVYWDQDPPERCAPSTFKGTPTAENPEYILGLDVPV 881
```

RESULT 11

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Q80Y89
ID Q80Y89 PRELIMINARY; PRT; 711 AA.
AC Q80Y89;
DT 01-JUN-2003 (TrEMBLrel. 24, Created)
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Erbb2 protein.
GN Name=Erbb2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RX MEDLINE=22388257; PubMed=12477932;
```

```
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Scapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Udén T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Whiting J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butlerfield Y.S.,
RA Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA Jones S.J., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences."
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (FEB-2003) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (JUN-2003) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC046811; AAH46811.1; -.
DR EMBL; BC053078; AAH53078.1; -.
DR HSSP; P06494; IN8Y.
DR MGD; MGI:195410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin-repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF01030; Recept_L_domain; 2.
DR SMART; SM00261; FU; 4.
SQ SEQUENCE 711 AA; 78707 MW; 682B188EB0E71318 CRC64;

Query Match 47.8%; Score 3255.5; DB 2; Length 711;
Best Local Similarity 84.4%; Pred. No. 9.8e-162;
Matches 588; Conservative 41; Mismatches 67; Indels 1; Gaps 1;

Qy 1 MELAAALCRWGLLALLPPGNAASTQVCTGTDMLRLPASPTHLDMLRLHYQGCVVQGNL 60
Db 1 MELAAWCRWGLLALLSPGAAGTQVCTGTDMLRLPASPTHLDMLRLHYQGCVVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIEQVQVYVLAHNOVROVPLQRIVRGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPANASLSFLQDIEQVQVYVLAHNRKVPQRLRIVRGTFEDNYALAVLDNR 120
Qy 121 DPLNN-TTPVTGASPGGLRELQRLSLTEILKGGVLIQRPQLCYQDTILWKDIFPKNNQL 179
Db 121 DPLDNTTAAPGRTPEGLRELQRLSLTEILKGGVLIQRPQLCYQDMVLWKDVLKNNQL 180
Qy 180 ALTLIDTNRSRACHPCSPCKGRCWGESSEDCQSLTRTVCAAGCARCKPLPTDCCHEQ 239
Db 181 APVMDTNRSRACPCAPCTCKDNHCWGESPEDCQILTGTICTSCARCKRLPTDCCHEQ 240
Qy 240 CAAGCTGPKHSDCLACILFNHSGICELHCPALVYNTDTEESMPNPEGRYTFGASCVTAC 299
Db 241 CAAGCTGPKHSDCLACILFNHSGICELHCPALLTYNTDTEESMPNPEGRYTFGASCVTTC 300
Qy 300 PYNLSTDVGSCTLVCPHLNHOEYTAEDGTQRCCKSKPCARVCYGLGMEHLREVAVTSA 359
Db 301 PYNLSTEVGSCTLVCPPPNNQEVTAEDGTQRCCKSKPCAGVCYGLGMEHLRGARITSD 360
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QY 360 NIOEFAGCKKIFGSLAFLPESPDGDPASNTAPLOPELOQVFFETLEITGYLYISAWPDSL 419
 Db 361 NIOEFAGCKKIFGSLAFLPESPDGDPASNTAPLOPELOQVFFETLEITGYLYISAWPESP 420
 QY 420 PDLVSFQNLQVIRGRILHNGAYSLLTQGLGISWGLRSRLSRELGLSLALHNNHNLHLCFVHT 479
 Db 421 QDLVSFQNLQVIRGRILHNGAYSLLTQGLGIHSLGLSRELGLSLALHNNHNLHLCFVHT 480
 QY 480 VPWDLFRNPHQALLHTANRPEDECVEGEGLAHQLCARGHCWGPGTQCVCNCSQFLRGQE 539
 Db 481 VPWDLFRNPHQALLHSGNRPESACGLEGLVNCNLARGHCWGPGTQCVCNCSQFLRGQE 540
 QY 540 CVEECRVLOGLPREYVNAHNLCPCHPECPONGSVTCFGEADOCVACAHYKDPFPCVAR 599
 Db 541 CVEECRVKGLPREYVRGKHLCPCHPECPONSETCYGSEADQCACAHYKDSSCVAR 600
 QY 600 CPSSGVPDLSPYPIWKPDEEGACQPCPINCSTHSCVDLDDKGCAPAPQASPLTISVAVV 659
 Db 601 CPSSGVPDLSPYPIWKPDEEGICQPCPINCSTHSCVDLDERGCPAPQASPTVFIATVV 660
 QY 660 GILLVVVLGVFILLIKRQOKIRKYMRLLOETEL 696
 Db 661 GVLLFLIIVVIGILIKRRRKIRKYMRLLOETEV 697

RESULT 12
 Q9QX70 PRELIMINARY; PRT; 1209 AA.
 AC Q9QX70;
 DT 01-MAY-2000 (TrEMBLrel. 13, Created)
 DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
 DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
 DE Epidermal growth factor receptor.
 GN Name=Egfr;
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=10116;
 RN [1]
 RP STRAIN=Fisher; TISSUE=Liver;
 RC MEDLINE=90258888; PubMed=2342466;
 RA Petch L.A., Harris J., Raymond W.W., Blasband A.J., Lee D.C.,
 RA Barp H.S.;
 RT "A truncated, secreted form of the epidermal growth factor receptor is
 RT encoded by an alternatively spliced transcript in normal rat tissue."
 RL Mol. Cell. Biol. 10:2973-2982(1990).
 RN [2]
 RP STRAIN=Fisher; TISSUE=Liver;
 RC STRAIN=Fisher; TISSUE=Liver;
 RA Guttridge K., Dawson T.L., Barp H.S.;
 RL Submitted (NOV-1999) to the EMBL/GenBank/DBJ databases.
 RN [3]
 RP STRAIN=Fisher; TISSUE=Liver;
 RC STRAIN=Fisher; TISSUE=Liver;
 RA Petch L.A.;
 RL Submitted (NOV-1991) to the EMBL/GenBank/DBJ databases.
 DR EMBL; M37394; AAF14008.1; -.
 DR PIR; A36325; A36325.
 DR HSSP; Q9H2C9; 1M17.
 DR GO; GO:0016020; C:membrane; IEA.
 DR GO; GO:0005524; F:ATP binding; IEA.
 DR GO; GO:0005489; F:electron transporter activity; IEA.
 DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
 DR GO; GO:0005506; F:iron ion binding; IEA.
 DR GO; GO:0004872; F:receptor activity; IEA.
 DR GO; GO:0016740; F:transferase activity; IEA.
 DR GO; GO:0006118; P:electron transport; IEA.
 DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
 DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
 DR InterPro; IPR001450; 4Fe4S_ferredoxin.
 DR InterPro; IPR000345; CytC_heme_BS.

DR InterPro; IPR000494; EGFR_L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin_repeat.
 DR InterPro; IPR009030; Grow_fac_recept.
 DR InterPro; IPR011009; Kinase like.
 DR InterPro; IPR000719; Prot_kinase.
 DR InterPro; IPR001245; Tyr_kinase.
 DR InterPro; IPR008266; Tyr_kinase_AS.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF00069; Kinase; 1.
 DR Pfam; PF01030; Recep_L_domain; 2.
 DR PRINTS; PR00353; 4FE4SFRDOXIN.
 DR PRINTS; PR00109; TYRKINASE.
 DR ProDom; PD000001; Prot_kinase; 1.
 DR SMART; SM00263; FU; 4.
 DR SMART; SM00219; TYRK; 1.
 DR PROSITE; PS00190; CYTOCHROME C; UNKNOWN 2.
 DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
 DR PROSITE; PS00111; PROTEIN_KINASE_DOM; 1.
 DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
 KW ATP-binding; Kinase; Receptor; Transferase; Tyrosine-protein kinase.
 SQ SEQUENCE 1209 AA; 134890 MW; 96FEF7F6CC1B7773 CRC64;

Query Match 46.6%; Score 3171; DB 2; Length 1209;
 Best Local Similarity 50.3%; Pred. No. 4.8e-157;
 Matches 642; Conservative 167; Mismatches 354; Indels 114; Gaps 26;

QY 3 LAALCRWGLLLALLPPGA--ASTQVCTGTDMLRLPASPTHLDMLRHLYQGCVQVQGNLE 61
 Db 15 LAALCAAG-----GALEKKVCGQTSNRLTQLTGFEDHFLSLQRMFNNEVVLGNLE 66
 QY 62 LTVLPINASLSFLQIOEVQGVVLAHNOVQVPLQRLRIVRGTLQFEDNYALAVLDNGD 121
 Db 67 ITYVQRNYDLISFLKTIQEVAGVYLAALNTVERIPLENLQIIRGNALYENTYALAVLSN-- 124
 QY 122 PLNNTPPTVGTASPGGLRELQLSLTEILKGGVLIORNPOLCYQDTTLWKDIFHKNNQLAL 181
 Db 125 -----YGTNKTGLRELPMENLQELLIGAVRFSNNPILCNWETIQWDIRV-QDVFLSN 175
 QY 182 TLIDNRS--RACHPCSPCKSGRCWGESSEDCQSILTRTVACGCA--RKGPIPLTDCHEQ 239
 Db 176 MSMDVQRHLTGCPKCDPSPGNSCWGRGECNCKLTKITCAQCCSRRCRGRSPSDCHNQ 235
 QY 240 CAAGCTGPKHSCLACLHENHSGICELHCPALVYNTDTFESMPNPEGYTTCGACSVTAC 299
 Db 236 CAAGCTGPRSDCLVCHRFDEATCKDTPPLMLNPTTYQMDVNPGEKYSFGATCVKCC 295
 QY 300 PNYLSTDVGSCTLVCPHLNQVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTA 359
 Db 296 PRNYVVDHSGSVRACGPDYEV--EEDGVSKCKCDGPKVCNGIGIGEFKDTLSINAT 354
 QY 360 NIOEFAGCKKIFGSLAFLPESPDGDPASNTAPLOPELOQVFFETLEITGYLYISAWPDSL 419
 Db 355 NIKHFKYCTAISGDLHLFVAFKGDSTFTPTDPRLEILKTVKEITGFLTIQAWPENW 414
 QY 420 PDLVSFQNLQVIRGRILHNGAYSLLTQGLGISWGLRSRLSRELGLSLALHNNHNLHLCFVHT 479
 Db 415 TDLHAFENLEIRGRTKQGFSLVAVGLNITSLGRSLKESIDGDVILISGRNLCYANT 474
 QY 480 VPWDLFRNPHQALLHTANRPEDECVEGEGLAHQLCARGHCWGPGTQCVCNCSQFLRGQE 539
 Db 475 INWKKLFGTPNQTKIMNNAEKCKATNHCNPLCSSSGCWGPEPTDCVSCQNVSRGE 534
 QY 540 CVEECRVLOGLPREYVNAHNLCPCHPECPONGSVTCFGEADOCVACAHYKDPFPCVAR 599
 Db 535 CVDKCNILEGEPREFVENSECICQCHPECLPQTMNITCTGRGPDNCIKCAHYVDGPRCVKT 594
 QY 600 CPSSGVPDLSPYPIWKPDEEGACQPCPINCSTHSCVDLDDKGCAPAPQASPLTISVAVV 658
 Db 595 CPSSGIMGNNTL--VKFADANNVCHLCHANCYTGACGPGKGC--QDPGPKIPSTATGI 651
 QY 659 VGILLVVVLGVFILLIKRQOKIRKYMRLLOETELVETLTPSGAMPNQAMRILKE 717

Db 652 VGLLLFIVV-VALGIGLFWRRQLVRKRLTLRLQLQERLVELPLTPSGEAPNQAHLRLIKE 710
Qy 718 TELRKVKVLSGAFVTVKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGV 777
Db 711 TEPKKIKVLSGAGTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMASV 770
Qy 778 GSPVSVRLGLCLSTVOLVTLMPYGCCLDHPVRENRLGSLQDLNWCQIAKMSYLE 837
Db 771 DNPVCRLLGLCLSTVOLVTLMPYGCCLDHPVRENRLGSLQDLNWCQIAKMSYLE 830
Qy 838 DVLRLVHRDLAARNVLKSPNHVKITDGLABRLIDIDETEHADGCKVPKIMMALESILRR 897
Db 831 DRLRLVHRDLAARNVLKSPNHVKITDGLABRLIDIDETEHADGCKVPKIMMALESILRR 890
Qy 898 RFTHQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICITIDVYIMVK 957
Db 891 IYTHQSDVMSYGVTVWELMTFGSKPYDGIPIAREIPDLLEKGERLPQPPICITIDVYIMVK 950
Qy 958 CWMIDSECRPRELVSFEFSMARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLEDMDGD 1016
Db 951 CWMIDADSRPRELILLESFSGWARDPQRYLVIOGDERMHLPSPTDSNFYRALMEEDMED 1010
Qy 1017 LVDAEEYLVPOOGFCFCDPPAPGAGVHHRSSSTRSGGDLTLGLEPSEERAPRPLA 1076
Db 1011 VVDAEYLVIPQGGFF-----NSPST-----SRTPLL 1036
Qy 1077 PSEGAGSDVDFDGLGMAAGLQSLPDPQLQRYSEDPTVPLPSET--DGVVAPLTC 1134
Db 1037 SLSANSN-----SSTVACINRNGSCRVKEDAFQRYSDPTSVLTENIDDTFL----- 1086
Qy 1135 PQPEYVQNPVDPVPPSPREGPLPAAPAGATLERAKTLSPGKNGVVKVDFAFGGAVENP 1194
Db 1087 PVPEYVQNPVDPVPPSPREGPLPAAPAGATLERAKTLSPGKNGVVKVDFAFGGAVENP 1135
Qy 1195 EYL-TPQGAAPQPHPPAPSPADNLYYDQ-----DP-----PERGAPSTF 1237
Db 1136 EYLTAQ-----PTCLSSGDFSSALMTQKSHQMSLDNPDYQODFFPKAKNGIF 1186
Qy 1238 KGTPTAENPEYVLGLDVP 1254
Db 1187 KG-PTAENAEYVLRAPP 1202

RESULT 13

EGFR_HUMAN

ID EGFR_HUMAN STANDARD; PRT; 1210 AA.
AC P00533; Q00688; Q00732; P06268; Q14225; Q92795; Q9BZS2; Q9GZX1;
AC Q9H2C9; Q9H3C9; Q9UMD7; Q9UMD8; Q9UMG5;
DT 21-JUL-1986 (Rel. 01, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Epidermal growth factor receptor precursor (EC 2.7.1.112) (Receptor
protein-tyrosine kinase ErbB-1).
GN Name=EGFR; Synonyms=ERBB1;
OS Homo sapiens (Human)
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=84219729; PubMed=6328312;
RA Ullrich A., Coussens L., Hayflick J.S., Dull T.J., Gray A., Tam A.W.,
Lee J., Yarden Y., Libermann T.A., Schlessinger J., Downward J.,
Mayes E.L.V., Whittle N., Waterfield M.D., Seeburg P.H.;
RT "Human epidermal growth factor receptor cDNA sequence and aberrant
expression of the amplified gene in A431 epidermoid carcinoma cells.";
RL Nature 309:418-425(1984).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORM 2).
RX TISSUE=Placenta;
RX MEDLINE=95382957; PubMed=7654368;
RA Ilekis J.V., Stark B.C., Scoccia B.;
RT "Possible role of variant RNA transcripts in the regulation of

epidermal growth factor receptor expression in human placenta.";
RL Mol. Reprod. Dev. 41:149-156(1995).
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 2).
RX TISSUE=Placenta;
RX MEDLINE=97078686; PubMed=8918811;
RA Reiter J.L., Maihle N.J.;
RT "A 1.8 kb alternative transcript from the human epidermal growth
factor receptor gene encodes a truncated form of the receptor.";
RL Nucleic Acids Res. 24:4050-4056(1996).
RN [4]
RP SEQUENCE FROM N.A. (ISOFORM 2).
RX TISSUE=Placenta;
RX MEDLINE=97256547; PubMed=9103388;
RA Ilekis J.V., Gariti J., Niederberger C., Scoccia B.;
RT "Expression of a truncated epidermal growth factor receptor-like
protein (TEGFR) in ovarian cancer.";
RL Gynecol. Oncol. 65:36-41(1997).
RN [5]
RP SEQUENCE FROM N.A. (ISOFORMS 3 AND 4).
RX TISSUE=Placenta;
RX MEDLINE=21100872; PubMed=11161793; DOI=10.1006/geno.2000.6341;
RA Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., Daniels A.J.,
Schehl C.L., Sinclair C., Pearsall R.S., Green P.J., Yee D., Lampland A.L.,
Balasubramanian S., Crossley T.D., Magnuson T.R., James C.D.,
Maihle N.J.;
RT "Comparative genomic sequence analysis and isolation of human and
mouse alternative EGFR transcripts encoding truncated receptor
isoforms.";
RL Genomics 71:1-20(2001).
RN [6]
RP SEQUENCE FROM N.A. (ISOFORM 1), AND VARIANTS GLN-98; ARG-266; LYS-521;
ILE-674; GLY-962 AND PRO-988.
RA Livingston R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N.,
Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S.,
Sherwood J.K., Sherwood A.M., Leithauser B.J., Nickerson D.A.;
RT "NIHES-SNPs, environmental genome project. NIHES ES15478, Department
of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";
RL Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.
RN [7]
RP SEQUENCE OF 575-687 FROM N.A.
RA Reiter J.L., Threadgill D.W., Daniels A.J., Schehl C.M.,
Lampland A.L., Balasubramanian S., Crossley T.O., Magnuson T.R.,
Maihle N.J.;
RT "Human and mouse alternative EGFR transcripts encoding only the
extracellular domain of the receptor.";
RL Submitted (FEB-1999) to the EMBL/GenBank/DBJ databases.
RN [8]
RP SEQUENCE OF 713-924 FROM N.A.
RX MEDLINE=84196372; PubMed=6326261;
RA Lin C.R., Chen W.S., Krueger W., Stolarsky L.S., Weber W., Evans R.M.,
Verma I.M., Gill G.N., Rosenfeld M.G.;
RT "Expression cloning of human EGF receptor complementary DNA: gene
amplification and three related messenger RNA products in A431
cells.";
RL Science 224:843-848(1984).
RN [9]
RP SEQUENCE OF 150-962 FROM N.A.
RX MEDLINE=84245835; PubMed=6330563;
RA Xu Y.H., Ishii S., Clark A.J.L., Sullivan M., Wilson R.K., Ma D.P.,
Roe B.A., Merlino G.T., Pastan I.;
RT "Human epidermal growth factor receptor cDNA is homologous to a
variety of RNAs overproduced in A431 carcinoma cells.";
RL Nature 309:806-810(1984).
RN [10]
RP SEQUENCE OF 1028-1210 FROM N.A.
RX MEDLINE=85046483; PubMed=6093780;
RA Simmen F.A., Gope M.L., Schulz T.Z., Wright D.A., Carpenter G.,
O'Malley B.W.;
RT "Isolation of an evolutionarily conserved epidermal growth factor
receptor cDNA from human A431 carcinoma cells.";
RL Biochem. Biophys. Res. Commun. 124:125-132(1984).
RN [11]


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Db 603 NNTL-VWKYADAGHVCHLCHPNCTYCTGPGLECGCTNGPKIP--STATGMVGLALLLV 659
Qy 665 VVLGWFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAOMRILKETELRKVK 724
Db 660 VALGIG---LFMRRHIVRKRRLRLQERELVEPLTPSGEAPNQAALLRILKETEFKKIK 716
Qy 725 VLGSAGFTVYKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSR 784
Db 717 VLGSAGFTVYKGLWIPEGEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCR 776
Qy 785 LLGICLTSTVQLITQLMPYGLLDHVRNRLGSDLLNWCQIAGKMSYLEDLVLRVHR 844
Db 777 LLGICLTSTVQLITQLMPYGLLDYVREHKDNGISQYLLNWCQIAGKMSYLEDLVLRVHR 836
Qy 845 DLARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPPIKMALESILRRRFTHSD 904
Db 837 DLARNVLKTPQHVKITDFGLAKLGAEBKEYHAEGKVPPIKMALESILHRIYTHSD 896
Qy 905 WMSGYVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIMVCKWMDISE 964
Db 897 WMSGYVTVWELMTFGSKPYDGIPIASEISSILEKGERLPQPPICTIDVYIMVCKWMDAD 956
Qy 965 CRPRFRELVEFSPNARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLEDDMDGLVDABEY 1023
Db 957 SRPKFRELIIIEFSKWARDPQRYLVIQDERMHLPSPTDSNFYRALMDEEDMDVDVDAEY 1016
Qy 1024 LVPOQGFPCDPAPGAGGMVHRRSSSTRSGGDLTLGLEPSEEAAPRLAPSEGAGS 1083
Db 1017 LIPOQGF---SPSTSRTPLLSSLSATS 1042
Qy 1084 DVFDGDLGMAAGKGLQSLTHDPSLQRYSEDPTVPLPSET--DGYVAPLTCSPQPEYVN 1141
Db 1043 N--NSTVACIDRNGLSQCPKEDSFQRYSSDPTGALTEDSIDDTFL-----PVPEYIN 1094
Qy 1142 QPVDROPSPREGPLPAAPAGATLERAKTILSPKNGVVKVDVFAFGAVENPEYL-TPQ 1200
Db 1095 Q-SVPEKPAQSVQNVVTHNPLNP-----APSRDPHYQD--PHSTAVGNPEYLTNVQ 1143
Qy 1201 GGAAPQHPHPPAFSPADNLYWDQ-----DP-----PERGAPPSTFKGTPTAE 1244
Db 1144 -----PTCVNSTFSDPAHWAQKSHQISLDNPDYQDFFPKPEAKNGIFKGS-TAE 1193
Qy 1245 NPEYL 1249
Db 1194 NAEYL 1198

RESULT 14
AAS83109 ID AAS83109 PRELIMINARY; PRT; 1210 AA.
AC AAS83109;
DT 14-APR-2004 (TrEMBLrel. 27, Created)
DT 14-APR-2004 (TrEMBLrel. 27, Last sequence update)
DE Epidermal growth factor receptor (Erythroblastic leukemia viral
DE (V-erb-b) oncogene homolog, avian).
GN EGFR.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RA Livingston R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N.,
RA Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S.,
RA Sherwood J.K., Sherwood A.M., Leithauser B.J., Nickerson D.A.;
RL Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.
DR EMBL: AY588246; AAS83109.1; -.
KW Receptor.
SQ SEQUENCE. 1210 AA; 134276 MW; D8A2A50B4EFB6ED2 CRC64;

Query Match 46.5%; Score 3166; DB 2; Length 1210;
Best Local Similarity 49.8%; Pred. No. 8.7e-157;
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Matches 630; Conservative 177; Mismatches 352; Indels 106; Gaps 21;
Qy 11 LLLALLPPGAA--STOVCTGTDMLRLPASPEHLDMLRLHYQCCVQVQGNLEITYLPTN 68
Db 14 LLAALCPASRALBEKKVCCQGSTSNKLTQLGTFEDHFLSLQRMFNCEVVLGNLEITYVORN 73
Qy 69 ASLSFLQDIOEVGYVLIHNOVRQVPLQRLRIVRGTFQDFEDNYVALAVLNGDPLNNTTP 128
Db 74 YDLSFLKTIQEVAGYVLIALTNTVERIPLENLQIIRGNMYVENSVALAVLSNYD----- 126
Qy 129 VTGASPEGLRELOIRSLTEILKGVLIQRPQILCYQDTILWKDIFKHQNQLALTLIDTNR 188
Db 127 ---ANKTGLKELPMRLQELIHGAVRFSNNPALCNVESIQWRDIVSDDFLSNMSMDFQNH 183
Qy 189 SRACHPCSPCKSGRCWGESSEDCOSITRTVCAGGCA-RCKGPLPTDCCHEOACAGCTGP 247
Db 184 LGSCLVCRKFRDEATCKDTCPLMLYNPTTYQMDVNPCKYSFGATCVKKCPRNVYVTD 243
Qy 248 KHSDDLACLHFNHSGICELHCPALVYNTDTFFESMPNPEGRYTFGASCVTACPNYLSLD 307
Db 244 RESDCLVCRKFRDEATCKDTCPLMLYNPTTYQMDVNPCKYSFGATCVKKCPRNVYVTD 303
Qy 308 VGSCTLVCPHNOEVTABDGTQRCCKSKPCARVCYGLGMEHLREVRVAVTSANIQEPAGC 367
Db 304 HGSCVRACGADSYEM-EEDGVKCKCEGPCRKVCNGIGIGEFKDSLSINATNIKHPKNC 362
Qy 368 KTIFGSLAPESFDGDPASNTAPLOEQLOVFETLEEITGYLYISAMPDLSPLSVQON 427
Db 363 TSSGDLHLIPVAFRGSFHTTLPDQELDIUKTVKEITGFLLIQWPNRDTLHAPEN 422
Qy 428 LQVIRGRILHNGAYSILTLQGLIGISWGLRLSLRELGLALIHNTLHLCFVHTVPMOOLFR 487
Db 423 LEIIRGTRKHQGFSLAVSLNITSLGRSLKEISDGVIIISGNKNCYANTINWKLFG 482
Qy 488 NPHQALLHTANRDEDECVGEGLACHOICARGHCWGPQFTQVNCQOFLRQOECVEBCRVL 547
Db 483 TSCQKTKIISNRGENSKATQGVCHALCSPEGCGPEPRDCVSCRNVSRGREGCDKNLL 542
Qy 548 QGIPREVVARHCLPCHPECOQNGSVTCFGEADQCVACHYKDPFPCVARSQGVKPD 607
Db 543 EGBRPFVENSECIIQHPCLPQAMNITCTGRGPDNCIQCAHYIDGPHCVKTCFAGVMGE 602
Qy 608 LSYMPIWKFPDEBEGACQPCINCTHSCVDLDDGCPAEQRAASPLTISVSIVAVG---ILLV 664
Db 603 NNTL-VWKYADAGHVCHLCHPNCTYCTGPGLECGCTNGPKIP--STATGMVGLALLLV 659
Qy 665 VVLGWFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAOMRILKETELRKVK 724
Db 660 VALGIG---LFMRRHIVRKRRLRLQERELVEPLTPSGEAPNQAALLRILKETEFKKIK 716
Qy 725 VLGSAGFTVYKGIWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYVMAGVSPYVSR 784
Db 717 VLGSAGFTVYKGLWIPEGEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCR 776
Qy 785 LLGICLTSTVQLITQLMPYGLLDHVRNRLGSDLLNWCQIAGKMSYLEDLVLRVHR 844
Db 777 LLGICLTSTVQLITQLMPYGLLDYVREHKDNGISQYLLNWCQIAGKMSYLEDLVLRVHR 836
Qy 845 DLARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPPIKMALESILRRRFTHSD 904
Db 837 DLARNVLKTPQHVKITDFGLAKLGAEBKEYHAEGKVPPIKMALESILHRIYTHSD 896
Qy 905 WMSGYVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIMVCKWMDISE 964
Db 897 WMSGYVTVWELMTFGSKPYDGIPIASEISSILEKGERLPQPPICTIDVYIMVCKWMDAD 956
Qy 965 CRPRFRELVEFSPNARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLEDDMDGLVDABEY 1023
Db 957 SRPKFRELIIIEFSKWARDPQRYLVIQDERMHLPSPTDSNFYRALMDEEDMDVDVDAEY 1016
Qy 1024 LVPOQGFPCDPAPGAGGMVHRRSSSTRSGGDLTLGLEPSEEAAPRLAPSEGAGS 1083
Db 1017 LIPOQGF---SPSTSRTPLLSSLSATS 1042
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QY 1084 DVFDGLGMAAKGLQSLPHDSPLQRYSEDPTVLPSET--DGTVABLTSPQPEYVN 1141
Db 1043 N--NSTVACIDRNLGLOSCPIKEDSFLQRYSSDPTGALTSDTDTEL-----PVPEYIN 1094
QY 1142 QPDRVQPPSPRGPLPAARAGATLERAKTISPGKNGVVKDVFAGGAVENPEYL-TPQ 1200
Db 1095 Q-SVPRPAGSVQNPVYHQPLNP-----APSRDPHYQD--PHSTAVGPEYLVNTVQ 1143
QY 1201 GGAAPQHPHPPAFSPADNLYWDQ-----DP-----PERGAPPSTFKGPTTAE 1244
Db 1144 -----PTCVNSTFDSPAHAWAQKGSQHSILSDNDPDYQDDPPFKAKEKNGIFKGS-TAE 1193
QY 1245 NPEYL 1249
Db 1194 NAEYL 1198

RESULT 15
ID Q8MIL8 PRELIMINARY; PRT; 1209 AA.
AC Q8MIL8;
DT 01-OCT-2002 (TrEMBLrel. 22, Created)
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Epidermal growth factor receptor.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OC NCBI_TaxID=9823;
RN [1]
SEQUENCE FROM N.A.
RA Kim J.G., Vallet J.L., Nonnenan D., Christenson R.K.;
RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AV117054; AAM77472.1; -.
DR HSSP; Q9H2C9; 1M17.
DR GO; GO:0016020; C:membrane; IEA.
DR GO; GO:0005524; F:ATP binding; IEA.
DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
DR GO; GO:0004872; F:receptor activity; IEA.
DR GO; GO:0016740; F:transferase activity; IEA.
DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
DR InterPro; IPR000345; CytC_heme_BS.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin-repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00069; Pkinase; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 5.
DR SMART; SM00219; TyrKc; 1.
DR PROSITE; PS00190; CYTOCHROME C; UNKNOWN_1.
DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
DR PROSITE; PS50011; PROTEIN KINASE DOM; 1.
DR PROSITE; PS00109; PROTEIN KINASE TYR; 1.
KW ATP-binding; Kinase; Receptor; Tyrosinase; Tyrosine-protein kinase.
SQ SEQUENCE 1209 AA; 133531 MW; 268E3FB11E36F90F CRC64;

Query Match 46.3%; Score 3153.5; DB 2; Length 1209;
Best Local Similarity 49.8%; Pred. No. 3.9e-156;
Matches 631; Conservative 178; Mismatches 350; Indels 107; Gaps 22;

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Db 11 LLALLAAHFQASPALEBKVCQTSNKLTLQGTGFEDHFLSLQRMFNNECVLGNLEITYM 70

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QY 66 PTNASLFLQDIOEQVGVVLIHNOVRQVPLQRLIRVIRGTQLFDNYALAVLDNGDPLNN 125
Db 71 QNSYLSFLTKTIOEVAGVYVLIATNVEKIPLENLQIRGNVLYENTHALAVLSN----- 124
QY 126 TTPVTGASPGGRELQSLSTEILKGGVLIQONPOLCVODTILKWDIFHKNNQLALTLD 185
Db 125 -----YGANKTGURELPDMRLQELIQAVRFSNNPALCHAESIQWRDIIVNSDFLSNMWDF 180
QY 186 TNRSRACHPCSPMCKSGCWGSESSDCOSLTRITVCAGCA-RCKGFLPTDCCHEQCAAC 244
Db 181 QSQSGCPKCDPGCLNGSCWAGAKENCKLTKVICAQCSGRCGRSPSDCCCHQCAAC 240
QY 245 TQPKISDCLACHFNHSGICELHCPALVTYNTDTFESMNPGRTRTFGASCUTACPNYL 304
Db 241 TGPRESDCLVCRFRDEATCKDTCPLMLYNPTTYQMDVNPGLKYSFGATCYKCKPRNV 300
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QY 365 AGCKXIFGSLAPLPESFDGPASNTAPLOEQVLFETLEEITGYLYISAWPDSPLDSV 424
Db 360 RNCTSIGDLHLTPVAFRGDSFTRTPPLDPKELDKTKVKEITGFLLIQAWPENRGLHA 419
QY 425 FQNLQVIRGRILHNGAYSILTLOGIGISWIGLSIELSGLSGLALIHNTLHCFVHTVPDQ 484
Db 420 FENLSIIRGTRKQHGOFSLAVGLDIAISGLSLKESISDGDVIVSGNRNLCAVNTISWKK 479
QY 485 LFRNPQALLHTANRPEBCEVGEGLACHQLCARHCWGPGTQCVCNCSOFLRGQECVERC 544
Db 480 LEFTASQTKIINNRSEKCKAWGHCNPLCSSEGCWGPEDPCDCSCNFRSGKCEVKC 539
QY 545 RVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFCVARCPGV 604
Db 540 NVLEGEPRFEVNAECVQCHPECLPQAKNVTGCRGPDSCVCAHYIDGPHCVKTCGAGI 599
QY 605 KPDLSVMIWPKFDEEGACQPCPINCTHSCVDLDDKGPAPQASPLTSIVASV-VGILL 663
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Db 956 DSRPFRELIIEFSWARDPQRYLVIOGDERMHLSPDTSNFYRALMDEDMEDVVDARE 1015
QY 1023 YLVPQQGFFCPDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEAG 1082
Db 1016 YLVPQQGF-HSPATSRTELLSLSATST-----PAVACVDRNG-- 1054
QY 1083 SDVFDGLGMAAKGLQSLPHTDHPQLQRYSDPTVLPSET--DGTVABLTSPQPEYV 1140
Db 1055 -----QSYPLKESFLQRYSSDPTGALTSDTDTEL-----PAPEYV 1092

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Qy 1141 NQDVRPQPPSPREGPLPAARPAGATLERAKTILSPGKNGVVKDVFAFGGAVENPEYL-TP 1199
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Qy 1200 QGGRAPOPHPPPAESPAFDNLYYWDQ-----DP-----PERGAPPSTFKGTPTA 1243
Db 1142 R-----PACINGGLDGFAPWAQTGSHQINLDNPDYQOAFPFKEAKSNGICKG-PAA 1191
Qy 1244 ENPEYL 1249
Db 1192 ENAEYL 1197

Search completed: January 25, 2005, 21:29:14
Job time : 184.563 secs

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FT	Region	465..479	/label= insertion_region	SQ	Sequence 1255 AA;
FT			/note= "suitable for foreign epitope insertion"		Query Match 100.0%; Score 6812; DB 3; Length 1255;
FT	Domain	484..623	/label= Cysteine_rich_domain		Best Local Similarity 100.0%; Pred. No. 0;
FT	Region	579..593	/label= insertion_region		Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
FT	Domain	624..654	/note= "suitable for foreign epitope insertion"		
FT	Region	632..652	/label= Transmembrane_domain		
FT			/label= insertion_region		
FT	Region	653..667	/note= "suitable for foreign epitope insertion"		
FT			/label= insertion_region		
FT	Domain	655..1010	/note= "suitable for foreign epitope insertion"		
FT	Region	661..675	/label= Tyrosine_kinase_domain		
FT			/label= insertion_region		
FT	Region	695..709	/note= "suitable for foreign epitope insertion"		
FT			/label= insertion_region		
FT	Region	710..730	/note= "suitable for foreign epitope insertion"		
FT			/label= insertion_region		
FT	Domain	1011..1235	/note= "suitable for foreign epitope insertion"		
FT			/label= C-terminal_domain		
XX	WO200020027-A2.				
PN					
XX					
XX	13-APR-2000.				
XX	05-OCT-1999;	99WO-DK000525.			
XX	05-OCT-1998;	98DK-00001261.			
PR	20-OCT-1998;	98US-0105011P.			
XX	(MEBI-) M & E BIOTECH AS.				
XX	Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;				
PI	Gautam A, Birk P, Karlsson G;				
PI	WPI; 2000-349917/30.				
DR	N-PSDB; AAA09455.				
XX	Inducing immune responses to weakly immunogenic, tumor associated peptide				
PT	antigens for the treatment of breast and prostate cancer.				
XX	Claim 62; Page 193-198; 220pp; English.				
XX	This is the human heregulin 2 (Her2) sequence. Immunogenic analogues of				
CC	Her2 can be used in the claimed method as an autovaccine to induce a CTL				
CC	response. Subdominant CTL epitopes, antibody binding regions and cysteine				
CC	residues involved in disulfide bonds are preserved in the immunogenized				
CC	forms. Regions suitable for the insertion of foreign T helper epitopes				
CC	are identified (see features table). The method is used for inducing				
CC	immune responses against weakly immunogenic cell-associated peptide				
CC	antigens (PA) such as those associated with cancers (self-proteins), e.g.				
CC	human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or				
CC	fibroblast growth factor 8b (FGF8b). The method comprises effecting				
CC	simultaneous presentation by antigen producing cells (APCs) of the				
CC	animal's immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)				
CC	group derived from the PA and/or at least 1 B-cell group derived from the				
CC	cell-associated PA; and (2) at least 1 first T helper cell group which is				
CC	foreign to the animal. Analogues of human PSM, human Her2 and				
CC	human/murine FGF8b comprising a substantial part of all known and				
CC	predicted CTL and B-cell epitopes of the respective PA and including at				
CC	least one foreign T helper epitope are also claimed. The method is used				
CC	to treat prostate, prostate/breast or breast cancer when the PA is human				
CC	PSM, FGF8b and Her2, respectively				
XX					

```
Qy 1021 EYLVPQGGFFCPDPAPGAGGWHRRHRSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Db 1021 EYLVPQGGFFCPDPAPGAGGWHRRHRSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Qy 1081 AGSDVFDGLGMAAGLQSLPTHDPSPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGLGMAAGLQSLPTHDPSPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NOPDVRQPPSPRGPLPAARPAGATLERAATLSPGKGVVVKDVFAGGAVENPEYLTPO 1200
Db 1141 NOPDVRQPPSPRGPLPAARPAGATLERAATLSPGKGVVVKDVFAGGAVENPEYLTPO 1200
Qy 1201 GGAAPQHPHPPAFPAFDNLYYMDQPPPERGAPPSTFKGTPAENPEYLGLDVFPV 1255
Db 1201 GGAAPQHPHPPAFPAFDNLYYMDQPPPERGAPPSTFKGTPAENPEYLGLDVFPV 1255

RESULT 2
AAB60167
ID AAB60167 standard; protein; 1255 AA.
XX
AC AAB60167;
XX
DT 03-APR-2001 (first entry)
XX
DE HER2 transgene plasmid construct encoded protein.
XX
KW Human; HER2; ErbB2 receptor; p185neu; maytansinoid conjugate; cancer;
KW antibody.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200100244-A2.
XX
PD 04-JAN-2001.
XX
PF 23-JUN-2000; 2000WO-US017229.
XX
PR 25-JUN-1999; 99US-0141316P.
PR 16-MAR-2000; 2000US-0189844P.
XX
PA (GETH ) GENENTECH INC.
XX
PI Erickson S, Schwall R;
XX
DR WPI; 2001-061962/07.
DR N-PSDB; AAF24297.
XX
PT Treating tumors, particularly breast cancers, which overexpress an ErbB
PT receptor and does not respond to an anti-ErbB antibody, comprises
PT conjugating the antibody to a maytansinoid.
XX
XX Example 3; Fig 4; 92pp; English.
XX
CC The present invention provides a method of treating cancer by
CC administering a conjugate of anti-ErbB antibody with a maytansinoid. In
CC particular, the antibody is directed against ErbB2 (also known as HER2
CC and p185neu). The method is particularly useful in the treatment of
CC breast, ovarian, stomach, endometrial, salivary gland, lung, kidney,
CC colon, colorectal, thyroid, pancreatic, prostate and bladder cancers
XX
SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 4; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLALLPFGAASCTQCTDMKRLPASPEETHLDMLRHLVQGCQVQGNL 60
Db 1 MELAALCRWGLLALLPFGAASCTQCTDMKRLPASPEETHLDMLRHLVQGCQVQGNL 60
```

```
Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHAHQVQVPLQRLRIVRGTQTFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVQGYVLIHAHQVQVPLQRLRIVRGTQTFEDNYALAVLDNG 120
Qy 121 DPLNNTTPTVGTASPGGLRELOLRSLTEILKGGVLIQRNPOLCYQDITLWKDIFHKNQOLA 180
Db 121 DPLNNTTPTVGTASPGGLRELOLRSLTEILKGGVLIQRNPOLCYQDITLWKDIFHKNQOLA 180
Qy 181 LTLIDTNRSRACHPCSPMKCKSGCWSESSDCSLTRTVCAGGCARCKGPLPTDCCHEQC 240
Db 181 LTLIDTNRSRACHPCSPMKCKSGCWSESSDCSLTRTVCAGGCARCKGPLPTDCCHEQC 240
Qy 241 AAGCTGPKHSDCLACLFHNSHGICELHCPALVYNTDTTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSHGICELHCPALVYNTDTTFESMPNPEGRYTFGASCVTACP 300
Qy 301 YNYLSTDVSGCTLVCPLNHOEVTABDGTQRCCKSKPCARVCYGLGMEHLREVRAVTSAN 360
Db 301 YNYLSTDVSGCTLVCPLNHOEVTABDGTQRCCKSKPCARVCYGLGMEHLREVRAVTSAN 360
Qy 361 IQEFAGCKIFGSLAFIPESFDGDPASNTAPLOEQLOVPETLEEITGYLYISAMPDLSL 420
Db 361 IQEFAGCKIFGSLAFIPESFDGDPASNTAPLOEQLOVPETLEEITGYLYISAMPDLSL 420
Qy 421 DLSVFQNLQVIRGRILHNGAYSLTQGLGISWLGRLSLRELGSGLALIHNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSLTQGLGISWLGRLSLRELGSGLALIHNTHLCFVHTV 480
Qy 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTQCVNCSQPLRQEC 540
Db 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTQCVNCSQPLRQEC 540
Qy 541 VESCRVLQGLPREVNVNARHCLPCHPRCOPONGSVTCFPGPADOCVACAHYKDPFPCVARC 600
Db 541 VESCRVLQGLPREVNVNARHCLPCHPRCOPONGSVTCFPGPADOCVACAHYKDPFPCVARC 600
Qy 601 PSGVKPDLSTYMPWKFPDEEGACQPCPINCTHSCVDLDDKGCAPAEQASPLTSIVSAVVG 660
Db 601 PSGVKPDLSTYMPWKFPDEEGACQPCPINCTHSCVDLDDKGCAPAEQASPLTSIVSAVVG 660
Qy 661 ILLVVLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQOMRILKETEL 720
Db 661 ILLVVLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQOMRILKETEL 720
Qy 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEITLDEAYVMAGVSP 780
Db 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEITLDEAYVMAGVSP 780
Qy 781 YVSRLLIGICLTSTVQLVTQMLPYGCLLDHVRENRLGSGQDLNWCNQIAKGSYLEDVDR 840
Db 781 YVSRLLIGICLTSTVQLVTQMLPYGCLLDHVRENRLGSGQDLNWCNQIAKGSYLEDVDR 840
Qy 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKIMMALESILRRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKIMMALESILRRRFT 900
Qy 901 HQSDVMSYGVYVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPCTIDVYIMVKCWM 960
Db 901 HQSDVMSYGVYVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPCTIDVYIMVKCWM 960
Qy 961 IDSECEPRFRELVSERFARMARDPQRFVVIQNEDLGPASPLDSTFYRSLDDDDMDGLVDA 1020
Db 961 IDSECEPRFRELVSERFARMARDPQRFVVIQNEDLGPASPLDSTFYRSLDDDDMDGLVDA 1020
Qy 1021 EYLVPQGGFFCPDPAPGAGGWHRRHRSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Db 1021 EYLVPQGGFFCPDPAPGAGGWHRRHRSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Qy 1081 AGSDVFDGLGMAAGLQSLPTHDPSPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGLGMAAGLQSLPTHDPSPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NOPDVRQPPSPRGPLPAARPAGATLERAATLSPGKGVVVKDVFAGGAVENPEYLTPO 1200
```

Db 1141 NQDVRPQSPREGPLPAARPAATLAKTUSPGKNGVVKDVFAGGAVENPEYLTPQ 1200
QY 1201 GGAAPQHPHPPASPAFDNLYYWDQPPPERGAPPSTFKGTPPTAENPEYGLDVPV 1255
Db 1201 GGAAPQHPHPPASPAFDNLYYWDQPPPERGAPPSTFKGTPPTAENPEYGLDVPV 1255

RESULT 3
ID AAE12130 standard; protein; 1255 AA.
XX AC AAE12130;
XX 18-DEC-2001 (first entry)
XX Human tyrosine kinase-type receptor, HER-2.
XX Therapeutic compound; major histocompatibility complex; vaccine;
KW antigenic peptide; MHC; immunoregulatory; immune response; HER-2;
KW adoptive immunotherapy; anti-cancer; breast cancer antigen; APC;
KW antigen presenting cell; human; tyrosine kinase-type receptor.

OS Homo sapiens.
XX
XX
XX Key Location/Qualifiers
XX Region 774..782
XX /note= "Antigenic epitope"
XX WO200168677-A2.
XX
XX 20-SEP-2001.
XX 16-MAR-2001; 2001WO-US040328.
XX 16-MAR-2000; 2000US-00527487.
XX (GENZ) GENZYME CORP.
XX
XX Nicolette CA;
XX
XX MPI; 2001-616284/71.
XX N-PSDB; AAD19731.
XX Novel synthetic therapeutic compound for inducing immune response and for
XX use in adoptive immunotherapy, has enhanced binding to major
XX histocompatibility molecules and enhanced immunoregulatory properties.

XX Claim 4; Page 63-67; 69pp; English.
XX
XX The invention relates to synthetic therapeutic compounds (antigenic
XX peptides) with enhanced binding to major histocompatibility complex (MHC)
XX molecules and enhanced immunoregulatory properties relative to their
XX natural counterparts. Compounds of the invention are useful for inducing
XX an immune response in a subject and for use in adoptive immunotherapy.
XX They are useful as components of anti-cancer vaccines and to expand
XX immune effector cells that are specific for cancers characterized by
XX expression of the breast cancer antigen, HER-2. Polynucleotides that
XX encode peptides of the invention are useful as hybridization probes and
XX as primers for the detection of genes of gene transcripts that are
XX expressed in antigen presenting cells (APCs), to confirm transduction of
XX polynucleotides into host cells. The present sequence is human tyrosine
XX kinase-type receptor, HER-2. Compounds of the invention are designed
XX based on the HER-2 antigenic peptide (774-782)

XX Sequence 1255 AA;
XX
XX Query Match 100.0%; Score 6812; DB 4; Length 1255;
XX Best Local Similarity 100.0%; Pred. No. 0;
XX Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRWGLLALLPFGAASTQVCTGTDMLKRLPASPETHLDMLRHLVYQGCQVVGNNL 60
|||||

Db 1 MELAALCRWGLLALLPFGAASTQVCTGTDMLKRLPASPETHLDMLRHLVYQGCQVVGNNL 60
QY 61 ELYTPTNASLFLQDIQEVQGVLIHQNVRQVPLRLIRVGTQLFEDNYALAVLDNG 120
Db 61 ELYTPTNASLFLQDIQEVQGVLIHQNVRQVPLRLIRVGTQLFEDNYALAVLDNG 120
QY 121 DPLNNTTPTVGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDITLAKDIFHKKNOLA 180
Db 121 DPLNNTTPTVGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDITLAKDIFHKKNOLA 180
QY 181 LTLIDTNRSRACHPCSPMCKGSRGCESEDQSLTRITVCAGGCARCKGPLPTDCCHEQC 240
Db 181 LTLIDTNRSRACHPCSPMCKGSRGCESEDQSLTRITVCAGGCARCKGPLPTDCCHEQC 240
QY 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHNOVTAEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHNOVTAEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSAN 360
QY 361 IOEFAGCKKIFGSLAPLPESFDGDPASNTAPLOQVFEETLEETITGYLISAWPDSLP 420
Db 361 IOEFAGCKKIFGSLAPLPESFDGDPASNTAPLOQVFEETLEETITGYLISAWPDSLP 420
QY 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWGLRSLRELGSGLALIHNNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWGLRSLRELGSGLALIHNNTHLCFVHTV 480
QY 481 PWDQFRNPHQALLHTANRPEDECVGEGGLACHQLCARGHCWGPGTQCVCNCSQFLRGQC 540
Db 481 PWDQFRNPHQALLHTANRPEDECVGEGGLACHQLCARGHCWGPGTQCVCNCSQFLRGQC 540
QY 541 VEECRVLQGLPREYVNAHCLFCHPECPQNGSVTCFGEAQCVCACAHYKDPFPFCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLFCHPECPQNGSVTCFGEAQCVCACAHYKDPFPFCVARC 600
QY 601 PSGVKPDLJYMPPIWKPPDEEGACQPCPNCTHSCVDLDDKGCPCAEQASPLTSIVSAVVG 660
Db 601 PSGVKPDLJYMPPIWKPPDEEGACQPCPNCTHSCVDLDDKGCPCAEQASPLTSIVSAVVG 660
QY 661 ILLVVLGVVFGILLIKRQOKIRKYMRELLOSTELVEPLTPSGAMPNOAQRILKETEL 720
Db 661 ILLVVLGVVFGILLIKRQOKIRKYMRELLOSTELVEPLTPSGAMPNOAQRILKETEL 720
QY 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVGSF 780
Db 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVGSF 780
QY 781 YVSRLLGICLTSTVQLVTOLMPYGLLDHVRNRRGLSGQDLLNWCMTAKGMSYLEDVR 840
Db 781 YVSRLLGICLTSTVQLVTOLMPYGLLDHVRNRRGLSGQDLLNWCMTAKGMSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKKNWALSILRRRT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKKNWALSILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFGAKYDGI PAREIPDLLEKGERLPOPPICITDVTVMVVKWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKYDGI PAREIPDLLEKGERLPOPPICITDVTVMVVKWM 960
QY 961 IDSECRPRPRELVSEFSRWARDPQRFVITQNEDLGPASPLDSTFVRSLLDEDDMGDLVDA 1020
Db 961 IDSECRPRPRELVSEFSRWARDPQRFVITQNEDLGPASPLDSTFVRSLLDEDDMGDLVDA 1020
QY 1021 EBYLVPOQGFPCDPAPGAGGMVHRHRSSTRSGGDLTLGLEPSEERAPSPAPSEG 1080
Db 1021 EBYLVPOQGFPCDPAPGAGGMVHRHRSSTRSGGDLTLGLEPSEERAPSPAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGKGLQSLFTHDPSPLOQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGKGLQSLFTHDPSPLOQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140

Qy 1141 NQDVRPQPPSPREGPLPAARPAAGATLAKTLSPGKNGVVKVFAFGGAVENPEYLTQP 1200
 Db 1141 NQDVRPQPPSPREGPLPAARPAAGATLAKTLSPGKNGVVKVFAFGGAVENPEYLTQP 1200
 Qy 1201 GGAAPQPPSPAPDNLYYWDQPPERGAPSTFKGTPTAENPEYLGIDVPV 1255
 Db 1201 GGAAPQPPSPAPDNLYYWDQPPERGAPSTFKGTPTAENPEYLGIDVPV 1255

RESULT 4

AAE26349
 ID AAE26349 standard; protein; 1255 AA.

XX AAE26349;

DT 13-DEC-2002 (first entry)

XX Human HER-2 protein.

XX Transgenic animal; transgenic; mammary gland cell; HER2; tumour; cancer;
 KW therapy; apoptosis; cytostatic; human.

OS Homo sapiens.

XX US2002035736-A1.

XX 21-MAR-2002.

XX 16-MAR-2001; 2001US-00811115.

XX 16-MAR-2000; 2000US-0189844P.

PA (ERIC/) BRICKSON S.

PA (KING/) KING K.

PA (SCHW/) SCHWALL R.

XX Erickson S, King K, Schwall R;

XX WPI; 2002-403759/43.

DR N-PSDB; AAD43934, AAD43935.

XX New transgenic non-human mammal that produces detectable levels of a
 PT native human HER2 protein in its mammary gland cells, useful as tumor
 PT models for testing HER2-directed cancer therapies, and for identifying
 PT anticancer agents.

XX Example 2; Page 26-29; 83pp; English.

XX The invention relates to a transgenic non-human mammal that produces in
 CC its mammary gland cells detectable levels of a native human HER2 protein
 CC or its fragment. The transgenic animals are useful as tumour models for
 CC testing HER2-directed cancer therapies, and for identifying anticancer
 CC agents. The animals may also be used as source of cells which can be
 CC immortalised in culture, in screening for compounds that have potential
 CC as prophylactic or therapeutic treatments of diseases or disorders
 CC involving expression of HER2. The anti-cancer molecules are useful for
 CC inducing apoptosis or cell death of cancer cells. The present sequence is
 CC human HER-2 protein

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 5; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLALLPPGAASQVCTGTDMLRLPASPETHLDMLRHLYQGQVVOGNL 60

Db 1 MELAALCRWGLLALLPPGAASQVCTGTDMLRLPASPETHLDMLRHLYQGQVVOGNL 60

Qy 61 ELTYLPTNASLSFLQDIQEVQGVYVLIHNNQVRQVPLQRLRIVRGTOQLFEDNYALAVLDNG 120

Db 61 ELTYLPTNASLSFLQDIQEVQGVYVLIHNNQVRQVPLQRLRIVRGTOQLFEDNYALAVLDNG 120

Qy 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQRPOLCYQDTILWKDIFHKNNOLA 180
 Db 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQRPOLCYQDTILWKDIFHKNNOLA 180
 Qy 181 LTIIDNRSRACHPCSPMKGSRCSWESSBDCQSLTRTVCCAGCARCKGPLPTDCCHQC 240
 Db 181 LTIIDNRSRACHPCSPMKGSRCSWESSBDCQSLTRTVCCAGCARCKGPLPTDCCHQC 240
 Qy 241 AAGCTGPKGSDCLACLHFNHSGICEHCPALVYNTDTTFESMPNPEGRYTFGASCVTACP 300
 Db 241 AAGCTGPKGSDCLACLHFNHSGICEHCPALVYNTDTTFESMPNPEGRYTFGASCVTACP 300
 Qy 301 YNYLSTDVSGCTLVCPHNOEVTAEQTCRCEKSPCARVCYGLGNEHLREVRVTSAN 360
 Db 301 YNYLSTDVSGCTLVCPHNOEVTAEQTCRCEKSPCARVCYGLGNEHLREVRVTSAN 360
 Qy 361 IQEFAGCKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLEETIGYLYISAWPDSL 420
 Db 361 IQEFAGCKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLEETIGYLYISAWPDSL 420
 Qy 421 DLSVFQNLQVIRGRILHNGAYSLTIOGLGISWGLSLRELGLSLALIHNTLHLCFYHTV 480
 Db 421 DLSVFQNLQVIRGRILHNGAYSLTIOGLGISWGLSLRELGLSLALIHNTLHLCFYHTV 480
 Qy 481 PWDQLFRNPHOALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTOCVNCSPFLRGQEC 540
 Db 481 PWDQLFRNPHOALLHTANRPEDECVGEGLAACHOLCARGHCWGPGPTOCVNCSPFLRGQEC 540
 Qy 541 VEECRVLQGLPREYVNAHCLPCHPECQPONGSVTCFGEADQCVCAHYKPPFCVARC 600
 Db 541 VEECRVLQGLPREYVNAHCLPCHPECQPONGSVTCFGEADQCVCAHYKPPFCVARC 600
 Qy 601 PSGVKPDLSPYMPIWKFPDEGACQPCPCINCTHSCVDLDDKGCPEABASPLTSIVSAVVG 660
 Db 601 PSGVKPDLSPYMPIWKFPDEGACQPCPCINCTHSCVDLDDKGCPEABASPLTSIVSAVVG 660
 Qy 661 ILLVWVGVVFGILIKRQOKIRKYTMRRLLQETELVEPLTPSGAMNQAMRLTKETEL 720
 Db 661 ILLVWVGVVFGILIKRQOKIRKYTMRRLLQETELVEPLTPSGAMNQAMRLTKETEL 720
 Qy 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETLDBAYVMAGVSP 780
 Db 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETLDBAYVMAGVSP 780
 Qy 781 YVSRLLGICLTSTVQLVTQIMPYGCLLDHVRENRGLGSQDILLNWCQIAKHSYLEDVR 840
 Db 781 YVSRLLGICLTSTVQLVTQIMPYGCLLDHVRENRGLGSQDILLNWCQIAKHSYLEDVR 840
 Qy 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKIMMALESILRRRFT 900
 Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGGKVPKIMMALESILRRRFT 900
 Qy 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVYIMVKKWM 960
 Db 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVYIMVKKWM 960
 Qy 961 IDSECRPRFRELVSFESRMARDPQRFVVIQNEIDLGSPASPLDSTFYRSLLEDMDGLVDA 1020
 Db 961 IDSECRPRFRELVSFESRMARDPQRFVVIQNEIDLGSPASPLDSTFYRSLLEDMDGLVDA 1020
 Qy 1021 EYLVPOQGFCCPDPAAGGMVHHRSSSTBSGGDLTLGLEPSEERAPRSLAPSEG 1080
 Db 1021 EYLVPOQGFCCPDPAAGGMVHHRSSSTBSGGDLTLGLEPSEERAPRSLAPSEG 1080
 Qy 1081 AGSDVFDGDLGMAAKGLQSLPETHDPSPLQRYSEDTVPVLPSETDGVVAPLTCSPQPEYV 1140
 Db 1081 AGSDVFDGDLGMAAKGLQSLPETHDPSPLQRYSEDTVPVLPSETDGVVAPLTCSPQPEYV 1140
 Qy 1141 NQDVRPQPPSPREGPLPAARPAAGATLAKTLSPGKNGVVKVFAFGGAVENPEYLTQP 1200
 Db 1141 NQDVRPQPPSPREGPLPAARPAAGATLAKTLSPGKNGVVKVFAFGGAVENPEYLTQP 1200

QY 1201 GGAAPQHPPPAPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYLGLDVPV 1255
DB 1201 GGAAPQHPPPAPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYLGLDVPV 1255

RESULT 5
ID AAE26366
XX AAE26366 standard; protein; 1255 AA.
AC AAE26366;
XX 13-DEC-2002 (first entry)
XX Human Her2 antigen.
XX Human; immune response; T-helper cell epitope; chitosan; CTL response;
XX vaccine; prostate cancer; breast cancer; Her2 antigen; cytostatic;
XX immunostimulant.
XX Homo sapiens.

XX Key Location/Qualifiers
FT Peptide 1..23
FT /label= Signal_peptide
FT Protein 24..1255
FT /note= "Mature human Her2 antigen"

XX WO200234287-A2.
XX 02-MAY-2002.
XX 26-OCT-2001; 2001WO-DK000705.
XX 27-OCT-2000; 2000DK-00001606.
XX 03-NOV-2000; 2000US-0245166P.
XX 18-JUN-2001; 2001DK-00000936.
XX (PHAR-) PHARMEXA AS.
XX Beier AM, Gautam A, Mouritsen S;
XX WPI; 2002-463339/49.
XX N-PSDB; AAD43986.
XX Inducing or enhancing an immune response against an antigen, particularly
XX cytotoxic T-lymphocyte responses, for treating or ameliorating prostate
XX or breast cancer, comprises administering the antigen formulated with
XX chitosan.

XX Disclosure; Page 91-95; 97pp; English.
XX The invention relates to a method for inducing or enhancing an immune
XX response against a polypeptide antigen in an animal, including human. The
XX method comprises administering the polypeptide antigen or at least one
XX variant which includes at least one first T-helper cell epitope that is
XX foreign to the animal (foreign TH epitope) and is formulated with
XX chitosan. The polypeptide antigen is weakly immunogenic or non-
XX immunogenic. The invention is used as vaccine. The chitosan and
XX polypeptide antigen or its variant are useful in the preparation of an
XX immunogenic composition for inducing or enhancing an immune response,
XX particularly CTL response, against the polypeptide or protein antigen.
XX The method for inducing or enhancing an immune response is useful in
XX treating or ameliorating cancer, e.g. prostate or breast cancer. The
XX present sequence is human Her2 antigen
XX Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 5; Length 1255;
Best Local Similarity 100.0%; Pred No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLLALLPPGAASTQVCTGTDMLRLPASPETHLDMLRHLYQCGQVVGSL 60
|||||

DB 1 MELAALCRWGLLLALLPPGAASTQVCTGTDMLRLPASPETHLDMLRHLYQCGQVVGSL 60
QY 61 ELYTPTNASTLSFLQDIQEVQGYVLI AHNOVROVFLORLRIVRGTLQFPDNVALAVLDNG 120
|||||
DB 61 ELYTPTNASTLSFLQDIQEVQGYVLI AHNOVROVFLORLRIVRGTLQFPDNVALAVLDNG 120
QY 121 DPLNNTTPTVGASPGGLRELQRLSITLILKGGVLQORNPOLCVQDTILWKDIFHKONQLA 180
|||||
DB 121 DPLNNTTPTVGASPGGLRELQRLSITLILKGGVLQORNPOLCVQDTILWKDIFHKONQLA 180
QY 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVACAGGCARCKGPLETDCCHEQC 240
|||||
DB 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVACAGGCARCKGPLETDCCHEQC 240
QY 241 AAGCTGPKHSDCLACIHPNHSGICELHCPALTYNTDTFESMNPBEGRTTFGASCVTACP 300
|||||
DB 241 AAGCTGPKHSDCLACIHPNHSGICELHCPALTYNTDTFESMNPBEGRTTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
|||||
DB 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
QY 361 IOEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLEETGYLIYSAWPDSL 420
|||||
DB 361 IOEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFETLEETGYLIYSAWPDSL 420
QY 421 DLSVFNQVIRGRILHNGAYSITLQGLGISHGLRSLRELGSGLAIHHNTHLCRVHTV 480
|||||
DB 421 DLSVFNQVIRGRILHNGAYSITLQGLGISHGLRSLRELGSGLAIHHNTHLCRVHTV 480
QY 481 PWDQLFRNPQALLHTANRPEDECVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQEC 540
|||||
DB 481 PWDQLFRNPQALLHTANRPEDECVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQEC 540
QY 541 VEECRVLQGLPREYVNHARCLPCHPECCQPNQSGVTCFGEADQCVACAHYKDPFPCVARC 600
|||||
DB 541 VEECRVLQGLPREYVNHARCLPCHPECCQPNQSGVTCFGEADQCVACAHYKDPFPCVARC 600
QY 601 PSGVFPDLISYMPIWKFPDEEGACQPCINCTHSCVDLDDKGPAPORASPLTSIVSAVVG 660
|||||
DB 601 PSGVFPDLISYMPIWKFPDEEGACQPCINCTHSCVDLDDKGPAPORASPLTSIVSAVVG 660
QY 661 ILLVVVLGVVFGILIKRQOKIRKVTMRLLQETELVEPLTPSGAMPNOAQMRILKETEL 720
|||||
DB 661 ILLVVVLGVVFGILIKRQOKIRKVTMRLLQETELVEPLTPSGAMPNOAQMRILKETEL 720
QY 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKIELDEAYVMAGVGS 780
|||||
DB 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKIELDEAYVMAGVGS 780
QY 781 YYSRLIGICTSTVOLVTQIMPYGCLLDHVNRNRLGSGODLLNMCQIAKGSYLEDV 840
|||||
DB 781 YYSRLIGICTSTVOLVTQIMPYGCLLDHVNRNRLGSGODLLNMCQIAKGSYLEDV 840
QY 841 LVHRLDAARNVLVKSPPNHVKITDFGLARLLDIDETEHADGKGKVPKMMALRESILRRRT 900
|||||
DB 841 LVHRLDAARNVLVKSPPNHVKITDFGLARLLDIDETEHADGKGKVPKMMALRESILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPCTTIDVYMWKCM 960
|||||
DB 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPCTTIDVYMWKCM 960
QY 961 IDSECRPRFRELVSFERNARDPQRFVVIQNEIDLGPASPLDSTFYRSLEDDMDGLVDA 1020
|||||
DB 961 IDSECRPRFRELVSFERNARDPQRFVVIQNEIDLGPASPLDSTFYRSLEDDMDGLVDA 1020
QY 1021 EBYLVPOQGFPCDPAPGAGGMVHHRHSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
|||||
DB 1021 EBYLVPOQGFPCDPAPGAGGMVHHRHSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAKGLQSLTPHDPSPLOQRYSEDPVPLPSETDGYVAPLTCSPQPEYV 1140
|||||
DB 1081 AGSDVFDGDLGMAAKGLQSLTPHDPSPLOQRYSEDPVPLPSETDGYVAPLTCSPQPEYV 1140

QY 1141 NQDVRPQPPSPREGPLPAARPAATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPO 1200
DB 1141 NQDVRPQPPSPREGPLPAARPAATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPO 1200
QY 1201 GGAAPQHPHPPAPSPAFDNLVYWDQDPPERGAPPSTFKGTPPTAENPEYLGIDVPV 1255
DB 1201 GGAAPQHPHPPAPSPAFDNLVYWDQDPPERGAPPSTFKGTPPTAENPEYLGIDVPV 1255

RESULT 6

AAU74545
ID AAU74545 standard; protein; 1255 AA.

AC AAU74545;

XX 23-APR-2002 (first entry)

XX Human HER2 (ErbB2) polypeptide.

XX Human; HER2; ErbB; epidermal growth factor receptor; receptor;
KW anti-ErbB antibody-maytansinoid conjugate; cancer; tumour; breast; ovary;
KW stomach; endometrium; salivary gland; lung; kidney; colon; colorectum;
KW thyroid; pancreas; prostate; bladder; ErbB2; neuronal disorder;
KW glial disorder; astrocytal disorder; hypothalamic disorder;
KW glandular disorder; macrophagal disorder; epithelial disorder;
KW stromal disorder; blastocoelec disorder; inflammatory disorder;
KW angiogenic disorder; immunological disorder.

XX Homo sapiens.

XX US2002001587-A1.

XX 03-JAN-2002.

XX 16-MAR-2001; 2001US-00811123.

XX 16-MAR-2000; 2000US-0189844P.

XX 05-OCT-2000; 2000US-0238327P.

XX (ERIC/) ERICKSON S.

XX (SCHW/) SCHWALL R.

XX (SLIW/) SLIWKOWSKI M.

XX Erickson S, Schwall R, Sliwkowski M;

XX WPI; 2002-163686/21.

XX N-PSDB; ABK14058.

XX Treating tumor characterized by overexpression of epidermal growth factor

XX receptor, ErbB or cancer in mammal, comprises administering anti-ErbB

XX antibody-maytansinoid conjugate to the mammal.

XX Example 3; Fig 7; 93pp; English.

XX The invention relates to treating a tumour in a mammal, where the tumour
XX is characterised by the overexpression of an epidermal growth factor
XX receptor (ErbB) and does not respond or responds poorly, to treatment
XX with an anti-ErbB antibody, comprising administering to the mammal an
XX anti-ErbB antibody-maytansinoid conjugate. The method is useful for
XX treating cancer or tumours of the breast, ovary, stomach, endometrium,
XX salivary gland, lung, kidney, colon, colorectum, thyroid, pancreas,
XX prostate and bladder, preferably breast cancer. The breast cancer is a
XX metastatic breast cancer or an aggressive form of metastatic breast
XX cancer which overexpresses ErbB2. The method is also useful for treating
XX neuronal, glial, astrocytal, hypothalamic, glandular, macrophagal,
XX epithelial, stromal, blastocoelec, inflammatory, angiogenic and
XX immunological disorders. This sequence represents the human HER2 (ErbB2)
XX polypeptide of the invention

XX Sequence 1255 AA;

XX Query Match 100.0%; Score 6812; DB 5; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0; Mismatches 0; Indels 0; Gaps 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRGLLLALLPPGAASTQVCTGDMKRLPASPTHDLMLRHLYQGQCVVGNL 60
DB 1 MELAALCRGLLLALLPPGAASTQVCTGDMKRLPASPTHDLMLRHLYQGQCVVGNL 60
QY 61 ELTYLPTNASLFLQDIQEVQGYVLIHAHQVQVPLQRLRIVRGTQLFEDNYALAVLDNG 120
DB 61 ELTYLPTNASLFLQDIQEVQGYVLIHAHQVQVPLQRLRIVRGTQLFEDNYALAVLDNG 120
QY 121 DPLNNTPTVTGASPGGLRELQLSLTEILKGGVLIQORNPOLCYQDITLWKDIFHKNNOLA 180
DB 121 DPLNNTPTVTGASPGGLRELQLSLTEILKGGVLIQORNPOLCYQDITLWKDIFHKNNOLA 180
QY 181 LTLIDTNRSRACHPCSPCKGRCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQC 240
DB 181 LTLIDTNRSRACHPCSPCKGRCWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQC 240
QY 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
DB 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
QY 301 YNYLSTDVSGSCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
DB 301 YNYLSTDVSGSCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
QY 361 IQEFAGCKIFGSLAFLPESPDGPASNTAPLOEQVPELLEETIGYLIYISAWPDSL 420
DB 361 IQEFAGCKIFGSLAFLPESPDGPASNTAPLOEQVPELLEETIGYLIYISAWPDSL 420
QY 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWLGSLRELGLSLHNTHLFCFVHTV 480
DB 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWLGSLRELGLSLHNTHLFCFVHTV 480
QY 481 PMDQLFRNPHQALLHTANRPEDECVGEGLAACHOLCARGHCWGSGPTQCVNCSFRLQOEC 540
DB 481 PMDQLFRNPHQALLHTANRPEDECVGEGLAACHOLCARGHCWGSGPTQCVNCSFRLQOEC 540
QY 541 VEECRVLQGLPREYVNRHCLPCHPCQONGSVTCFGEADOCVACAHYKDPFPCVARC 600
DB 541 VEECRVLQGLPREYVNRHCLPCHPCQONGSVTCFGEADOCVACAHYKDPFPCVARC 600
QY 601 PSGVKPDLSPYMPKPFDEGACQPCPINCTHSCVDLDDKGCAPAEQASPLTSTVSAVVG 660
DB 601 PSGVKPDLSPYMPKPFDEGACQPCPINCTHSCVDLDDKGCAPAEQASPLTSTVSAVVG 660
QY 661 ILLVVLGVVFGILIKRQOKIRKYMRRLLQETELVEPLTPSGAMPNQAMRILKETEL 720
DB 661 ILLVVLGVVFGILIKRQOKIRKYMRRLLQETELVEPLTPSGAMPNQAMRILKETEL 720
QY 721 RKVKVLGSGAFGVYKGIWIPDGENYKI PVAIKVLRNTSPKANKETLDEAYVMAGVSP 780
DB 721 RKVKVLGSGAFGVYKGIWIPDGENYKI PVAIKVLRNTSPKANKETLDEAYVMAGVSP 780
QY 781 YVSRLLGICLTSTVQLVTQMLPYGCLLDHVRNRLGSDGLLNCWQIAKGSYLEDVR 840
DB 781 YVSRLLGICLTSTVQLVTQMLPYGCLLDHVRNRLGSDGLLNCWQIAKGSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLAARLLDIDETEHADGGKVPKIMMALESILRRRFT 900
DB 841 LVHRDLAARNVLKSPNHVKITDFGLAARLLDIDETEHADGGKVPKIMMALESILRRRFT 900
QY 901 HQSDVMSYGVYVWELMTFGKPYDGTIPAREIPDLLEKGERLPPOPTCTIDVYIMVKCWM 960
DB 901 HQSDVMSYGVYVWELMTFGKPYDGTIPAREIPDLLEKGERLPPOPTCTIDVYIMVKCWM 960
QY 961 IDSECPFRFELVSEFSRMARDPQRFVIONEDLGPASPLDSTFYRSLDEDDMDGLVDA 1020
DB 961 IDSECPFRFELVSEFSRMARDPQRFVIONEDLGPASPLDSTFYRSLDEDDMDGLVDA 1020
QY 1021 EYLVFPQQGFPCDDPAPGAGMWHRRHSSTSGGGDLTLGLEPSEEAAPRGLAPSE 1080
DB 1021 EYLVFPQQGFPCDDPAPGAGMWHRRHSSTSGGGDLTLGLEPSEEAAPRGLAPSE 1080

Db 1021 EEYLVPOQGFCDPAPAGAGMVHHRSSSTRSGGDLTLGLEPSEEBAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPLQRYSEDTVPLPSETDGYVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPLQRYSEDTVPLPSETDGYVAPLTCSPQPEYV 1140
QY 1141 NQDVRFPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
Db 1141 NQDVRFPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
QY 1201 GGAPOPHPPAPSPAFDNLVYWDQPPRGAPPTFTKGTPTAENPEYLGLDVVP 1255
Db 1201 GGAPOPHPPAPSPAFDNLVYWDQPPRGAPPTFTKGTPTAENPEYLGLDVVP 1255

RESULT 7

ABR47447
ID ABR47447 standard; protein; 1255 AA.

XX AC ABR47447;

XX DT 12-JUN-2003 (first entry)

XX DE Breast cancer associated protein sequence SEQ ID NO:126.

XX KW Human; breast cancer; cytostatic; gene therapy.

XX OS Homo sapiens.

XX PN WO2003004989-A2.

XX PD 16-JAN-2003.

XX PF 21-JUN-2002; 2002WO-US019669.

XX PR 21-JUN-2001; 2001US-0299887P.

XX PR 27-JUN-2001; 2001US-0301572P.

XX PR 18-JUL-2001; 2001US-0306501P.

XX PR 25-SEP-2001; 2001US-0325002P.

XX PR 05-MAR-2002; 2002US-0362585P.

XX PR 14-MAY-2002; 2002US-0380391P.

XX PA (MILL-) MILLENIUM PHARM INC.

XX PI Lillie J, Gannavarapu M, Glatt K, Hoeresh S, Kamatkar S;

XX PI Mertens M, Monahan JF, Myer V, Wang Y, Xu Y, Zhao X, Meyers RE;

XX PI Bast RC, Hortobagyi GN, Pusztai L, Meric F, Sahin A, Mills GB;

XX DR WPI; 2003-210381/20.

XX DR N-PSDB; ACC50139.

XX PT Breast cancer diagnosis or treatment by comparing the level of expression

XX PT of a marker in a patient sample with that in the control non-breast

XX PT cancer sample.

XX PS Claim 1; SEQ ID NO 126; 128pp; English.

XX CC The present invention describes a method for assessing whether a patient

XX CC is afflicted with breast cancer. The method comprises comparing the level

XX CC of expression of a marker (gene/polypeptide see ACC50076 to ACC50334 and

XX CC ABR47386 to ABR47632) in a patient sample and the normal level of

XX CC expression of the marker in a control non-breast cancer sample, where a

XX CC significant increase in the level of expression of the marker in the

XX CC patient sample and the normal level is an indication that the patient is

XX CC afflicted with breast cancer. The breast cancer associated sequences from

XX CC the present invention have cytostatic activities and can be used in gene

XX CC therapy. The method is useful for diagnosing and treating breast cancer.

XX CC N.B. The sequence data for this patent did not form part of the printed

XX CC specification, but was obtained in electronic format directly from WIPO

XX CC at ftp.wipo.int/pub/published_pct_sequences

XX CC Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 6; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRWGLLLALLPPGAASCTGCTDMKLRLPASPETHLDMLRHLHYQGCVVQGNL 60
Db 1 MELAALCRWGLLLALLPPGAASCTGCTDMKLRLPASPETHLDMLRHLHYQGCVVQGNL 60
QY 61 ELTYLPTNASLFLQDIQEVQGVYLIAHNQVQVQLRLIRVGTQLPFDNALVALVDNG 120
Db 61 ELTYLPTNASLFLQDIQEVQGVYLIAHNQVQVQLRLIRVGTQLPFDNALVALVDNG 120
QY 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLTQRPOLCVQDTILMKDIFHKKNQLA 180
Db 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLTQRPOLCVQDTILMKDIFHKKNQLA 180
QY 181 LTLIDNRSRACHPCSPCKSGRCWGESSEDCQSLTRTVTCAGGCARCKGFLPTDCCHEQC 240
Db 181 LTLIDNRSRACHPCSPCKSGRCWGESSEDCQSLTRTVTCAGGCARCKGFLPTDCCHEQC 240
QY 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDFESMNPPEGRTYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDFESMNPPEGRTYTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKPCARVCYGLGMEHLREVRVTSAN 360
QY 361 IOEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFTELEITGYLIYSAMPDSL 420
Db 361 IOEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQLQVFTELEITGYLIYSAMPDSL 420
QY 421 DLSVFQNLQVIRGRIHNGAYSLTIQGLGISHWLSRLRELGSGLAIHNNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRIHNGAYSLTIQGLGISHWLSRLRELGSGLAIHNNTHLCFVHTV 480
QY 481 PWDQLFRPHQALLHTANRPEDECVGEGLAHOLCARGHCWGPPTQCVNCQSFRLRGQBC 540
Db 481 PWDQLFRPHQALLHTANRPEDECVGEGLAHOLCARGHCWGPPTQCVNCQSFRLRGQBC 540
QY 541 VEECRVLQGLPREYVYVNAHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFPCVARC 600
Db 541 VEECRVLQGLPREYVYVNAHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFPCVARC 600
QY 601 PSGVKPDLSYMPIMKFPDDEGACQPCINCHSCVDLDDKGPAPQASPLTSIVSAVVG 660
Db 601 PSGVKPDLSYMPIMKFPDDEGACQPCINCHSCVDLDDKGPAPQASPLTSIVSAVVG 660
QY 661 ILLVVVLGVVFGILIKRQOKIRKYTMRRLLQETELVEPLTPSGAMPNQAOMRILKETEL 720
Db 661 ILLVVVLGVVFGILIKRQOKIRKYTMRRLLQETELVEPLTPSGAMPNQAOMRILKETEL 720
QY 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDYAVMAGVGP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDYAVMAGVGP 780
QY 781 YYSRLGLCTSTVQLVTQLMPYGCILDHVRENRRGLSGODLLNMCQIAGKMSYLEDVR 840
Db 781 YYSRLGLCTSTVQLVTQLMPYGCILDHVRENRRGLSGODLLNMCQIAGKMSYLEDVR 840
QY 841 LVHRDLAARNVLVKSPNVHKITDFGLARLLDIDETEHADGGKVPKWMALLESILRRRT 900
Db 841 LVHRDLAARNVLVKSPNVHKITDFGLARLLDIDETEHADGGKVPKWMALLESILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITDVTVMYKWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICITDVTVMYKWM 960
QY 961 IDSECRPRFRELVSFSEFMSWARDPQRFVYVTONEDIGPASPDLSTFFYSILDEDDMDGLVA 1020
Db 961 IDSECRPRFRELVSFSEFMSWARDPQRFVYVTONEDIGPASPDLSTFFYSILDEDDMDGLVA 1020
QY 1021 EBYLVPQQGFCDPAPAGAGMVHHRSSSTRSGGDLTLGLEPSEEBAPRSLAPSEG 1080

Db 1021 EYLVPQQGFCDPAPGAGMVHRRSSSTRSGGDLTLGLEPSEERAPSLADSEG 1080
Qy 1081 AGSDVFDGLGMAAKGLQSLPTHDPPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGLGMAAKGLQSLPTHDPPLQRYSDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTSLSPGKNGVVKDVFAPGGAVENPEYLTQ 1200
Db 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTSLSPGKNGVVKDVFAPGGAVENPEYLTQ 1200
Qy 1201 GGAAPQHPHPPSPAFDNLVYWDQDPPERGAPPSTFKGPTTAENPYLGLDVPV 1255
Db 1201 GGAAPQHPHPPSPAFDNLVYWDQDPPERGAPPSTFKGPTTAENPYLGLDVPV 1255

RESULT 8
ABP74708
ID ABP74708 standard; protein; 1255 AA.
XX AC ABP74708;
XX AC
XX AC
DT 03-FEB-2003 (first entry)
XX Human Her2/Neu protein SEQ ID NO:594.
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell; chromosome 17q21-q22.
XX Homo sapiens.
XX W0200281646-A2.
XX PN
XX PD
XX 17-OCT-2002.
XX
XX 04-APR-2002; 2002WO-US011101.
XX 06-APR-2001; 2001US-0282211P.
XX 07-NOV-2001; 2001US-0337017P.
XX 07-MAR-2002; 2002US-0363210P.
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX
XX Simard JJJ, Diamond DC, Liu L, Xie Z;
XX
XX WPI; 2003-067518/06.
XX N-PSDB; ABQ83856.

XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX
XX Claim 1; Page 175; 352pp; English.
XX
XX The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6812; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MELAALCRWGLLIALLPAGAASTQVCTGTDMLRLPASPTHLDMLRLHLYQGCVVQGNL 60
Db 1 MELAALCRWGLLIALLPAGAASTQVCTGTDMLRLPASPTHLDMLRLHLYQGCVVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIQEVQGVVLAHNOVROVPLQRLRIVRGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVQGVVLAHNOVROVPLQRLRIVRGTQLFEDNYALAVLDNG 120
Qy 121 DPLNNTPTVTGASPGGLRELQLRSLTEILKGGVLIQRNPOLCYQDTILWKDI FHKNNOLA 180
Db 121 DPLNNTPTVTGASPGGLRELQLRSLTEILKGGVLIQRNPOLCYQDTILWKDI FHKNNOLA 180
Qy 181 LTLIDTNRSPACHPCSPCKGSRGSESSDCSLTRTVCCAGCARCKGPLTDCCHEQC 240
Db 181 LTLIDTNRSPACHPCSPCKGSRGSESSDCSLTRTVCCAGCARCKGPLTDCCHEQC 240
Qy 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300
Qy 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Qy 361 IQEPACKKIFGSLAFPLPSFDGDPASNTAPLOEQLOVFEETLEETIGYLIYISAWPDSL 420
Db 361 IQEPACKKIFGSLAFPLPSFDGDPASNTAPLOEQLOVFEETLEETIGYLIYISAWPDSL 420
Qy 421 DLSVFQNLQVIRGRIILHNGAYSILTQGLGISWGLSLRSLRSLGSLALIHNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRIILHNGAYSILTQGLGISWGLSLRSLRSLGSLALIHNTHLCFVHTV 480
Qy 481 PWDQLFRNHQALLHTANRPEDCEVGEGLACHOLCARGHCWGPGPTQCVNCSQFLRQEC 540
Db 481 PWDQLFRNHQALLHTANRPEDCEVGEGLACHOLCARGHCWGPGPTQCVNCSQFLRQEC 540
Qy 541 VEESCRVLQGLPREYVNAHCLPCHPBCQPONGSVTCFEGPADQCVACHYKDPFCVARC 600
Db 541 VEESCRVLQGLPREYVNAHCLPCHPBCQPONGSVTCFEGPADQCVACHYKDPFCVARC 600
Qy 601 PSGVKPDLSTYMPIWKFPEDEGACQPCPINCTHSCVDLDDKGCFAEORASPLTSTVSAVG 660
Db 601 PSGVKPDLSTYMPIWKFPEDEGACQPCPINCTHSCVDLDDKGCFAEORASPLTSTVSAVG 660
Qy 661 ILLVVVLGVVVGILIKRQOKIRKYTMRRLLQSTELVEPLTPSGAMPNQAMRILKETEL 720
Db 661 ILLVVVLGVVVGILIKRQOKIRKYTMRRLLQSTELVEPLTPSGAMPNQAMRILKETEL 720
Qy 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRENTSPKANKETLDEAYVMAGVGP 780
Db 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRENTSPKANKETLDEAYVMAGVGP 780
Qy 781 YVSRLLGICLTSVQLVTQLMPYGLLDHVRNRRGLSGODLLNWCQIAKGSYLEDVR 840
Db 781 YVSRLLGICLTSVQLVTQLMPYGLLDHVRNRRGLSGODLLNWCQIAKGSYLEDVR 840
Qy 841 LVHRDLAARNVLKSPNHVKITDIFGLARLDDIDETEHADGGKVP IKWMALESILRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDIFGLARLDDIDETEHADGGKVP IKWMALESILRRFT 900
Qy 901 HQSDVWSYGVTVWELMTFGAKPYDGI PARBI PDLLEKGERLPQPPICITIDVYIMVKWM 960
Db 901 HQSDVWSYGVTVWELMTFGAKPYDGI PARBI PDLLEKGERLPQPPICITIDVYIMVKWM 960
Qy 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDGLVDA 1020
Db 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSLLEDMDGLVDA 1020
Qy 1021 EYLVVQQGFCDPAPGAGMVHRRSSSTRSGGDLTLGLEPSEERAPSLADSEG 1080

Db 1021 EYLVPQQGFFCPDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEBAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
QY 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTTPQ 1200
Db 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTTPQ 1200
QY 1201 GGAAPQHPHPPAPSPAFDNLVYWDQPPERGAPPSTFKGTPTAENPEYLGLDVFPV 1255
Db 1201 GGAAPQHPHPPAPSPAFDNLVYWDQPPERGAPPSTFKGTPTAENPEYLGLDVFPV 1255

RESULT 9

AAE38390
ID AAE38390 standard; protein; 1255 AA.

XX AAE38390;

XX AC 20-NOV-2003 (first entry)

XX DT Human c-erbB2 protein.

XX DE ErbB2; HER2; neu; breast cancer; protein therapy; human.

XX KW Homo sapiens.

XX OS

XX FH Key Location/Qualifiers

FT Domain 1..653

FT /note= "Extracellular domain"

XX PN WO2003061559-A2.

XX PD 31-JUL-2003.

XX PF 15-OCT-2002; 2002WO-US032947.

XX PR 12-OCT-2001; 2001US-0329183P.

XX PA (UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE.

XX PI Krag DN, Pero SC, Oligino L;

XX DR WPI; 2003-671426/63.

XX DR N-PSDB; AAD58073.

XX A composition for diagnosing, preventing or treating disorders

XX PT characterized by ErbB2 overexpression (e.g. breast cancer) comprises an

XX PT ErbB2 binding peptide that binds specifically to the extracellular domain

XX PT of ErbB2.

XX PS Disclosure; Page 95-100; 106pp; English.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAAICRWGLLIALLPPGAASQVCTGTDMLRLPASPEHLDMLRHLYQGCQVVOGNNL 60

Db 1 MELAAICRWGLLIALLPPGAASQVCTGTDMLRLPASPEHLDMLRHLYQGCQVVOGNNL 60

QY 61 ELTYLPTNASLSFLQDIOEQGVYLIHNRQVPLQRLRIVRGTLQFEDNALVALVDNG 120

Db 61 ELTYLPTNASLSFLQDIOEQGVYLIHNRQVPLQRLRIVRGTLQFEDNALVALVDNG 120
QY 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLIQORNQOLCYQDITLWKDIFPKNNQLA 180
Db 121 DPLNNTTPTVGTASPGGLRELQRLSLTEILKGGVLIQORNQOLCYQDITLWKDIFPKNNQLA 180
QY 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRITVCAGGCARCKGPLPTDCCHEQC 240
Db 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRITVCAGGCARCKGPLPTDCCHEQC 240
QY 241 AAGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMNPBGRVTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACILHFNHSGICELHCPALVTYNTDTFESMNPBGRVTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHLNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSAN 360
QY 361 IOEFAGCKKIFGSLAFLPESPDGDPASNTAPLOQVPELLEETITGVLYISAWPDSLP 420
Db 361 IOEFAGCKKIFGSLAFLPESPDGDPASNTAPLOQVPELLEETITGVLYISAWPDSLP 420
QY 421 DLSVFONLQVIRGRILHNGAYSILTLQGLGISWLGRLSRELGLALIHNNTHLCFVHTV 480
Db 421 DLSVFONLQVIRGRILHNGAYSILTLQGLGISWLGRLSRELGLALIHNNTHLCFVHTV 480
QY 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAHQLCARGHCWGPGPTQCVNCQSLRGQEC 540
Db 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAHQLCARGHCWGPGPTQCVNCQSLRGQEC 540
QY 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGPEADQCACAHYKDPFFCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGPEADQCACAHYKDPFFCVARC 600
QY 601 PSGVKPDLSPYMPIWKFPDEEGACQPCPINCTHSCVDLDDKGCPCAEORASPLTSIVSAVVG 660
Db 601 PSGVKPDLSPYMPIWKFPDEEGACQPCPINCTHSCVDLDDKGCPCAEORASPLTSIVSAVVG 660
QY 661 ILLVVVLGVVFGILIKRRQOKIRKVTMRLLQETELVEPLTPSGAMPNQAQRILKETEL 720
Db 661 ILLVVVLGVVFGILIKRRQOKIRKVTMRLLQETELVEPLTPSGAMPNQAQRILKETEL 720
QY 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVRENTSPKANKEILDEAYVMAGVGP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVRENTSPKANKEILDEAYVMAGVGP 780
QY 781 YVSRLLIGICTSTVQLVTOLMEPYGCLLDHVNRNRGLSGQDLINWCQIAKMSYLEDVYR 840
Db 781 YVSRLLIGICTSTVQLVTOLMEPYGCLLDHVNRNRGLSGQDLINWCQIAKMSYLEDVYR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVKPIKMWALSILRRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVKPIKMWALSILRRRFT 900
QY 901 HOSDVMSYGVTVWELMTFGAKPYDGIIPAREIPOLLEKGERLPQPPICITDVMVMVKWM 960
Db 901 HOSDVMSYGVTVWELMTFGAKPYDGIIPAREIPOLLEKGERLPQPPICITDVMVMVKWM 960
QY 961 IDSECRPRPRELVSEFBSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDMGDLVDA 1020
Db 961 IDSECRPRPRELVSEFBSRMARDPQRFVVIQNEDLGPASPLDSTFYRSLLEDDMGDLVDA 1020
QY 1021 EYLVPQQGFFCPDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEBAPRSLAPSEG 1080
Db 1021 EYLVPQQGFFCPDPAPGAGMWHHRSSSTRSGGDLTLGLEPSEBAPRSLAPSEG 1080
QY 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDTVPPLSETDGVAPLTCSPQPEYV 1140
QY 1141 NQDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTTPQ 1200

Db 1141 NOPDVRQPPSPREGPIIPAAAPAGATLERAKTILSPGKNGVVKVFAFGGAVENPEYITPQ 1200
ADA38143
Qy 1201 GGAAPQHPPPAFSPAFDNLYYWDQDPPRGAPSTFKGTPTAENPEYILGLDVPV 1255
Db 1201 GGAAPQHPPPAFSPAFDNLYYWDQDPPRGAPSTFKGTPTAENPEYILGLDVPV 1255

RESULT 10
ID ADA38143 standard; protein; 1255 AA.
XX AC ADA38143;
XX DT 20-NOV-2003 (first entry)
XX DE Human erb-B protein, a target of a therapeutic nanostructure.
XX KW implantable microscopic device; nanostructure; ligand; gout; bone injury;
XX KW cancer; HIV; p1; p2; human; erb-B.
XX OS Homo sapiens.
XX PN W02003053357-A2.
XX PD 03-JUL-2003.
XX PF 18-DEC-2002; 2002WO-US040678.
XX PR 19-DEC-2001; 2001US-0342894P.
XX PA (WILK-) WILK PATENT DEV CORP.
XX PI Stirbl RC, Snead ML, Xu J, Vitetta ES, Wilk PJ;
XX DR WFI; 2003-569175/53.
XX PT Diagnostic or therapeutic method involves inserting medical devices
PT including nanostructures provided with ligand into patient, and attaching
PT nanostructures through ligand to predetermined target structure inside
XX patient.

Example 4; Page 14-15; 36pp; English.
XX This invention relates to a novel medical method comprising providing an
XX implantable microscopic device including a nanostructure provided with a
XX ligand for effectively coupling the nanostructure to a predetermined
XX chemical or molecular site. Specifically, the microscopic device is
XX directly implanted into patients at predetermined sites, and on reaching
XX the target site the nanostructure is activated to perform a preselected
XX medical diagnostic or therapeutic function. Accordingly, the present
XX invention describes using this method for the treatment of various
XX illnesses including gout whereby the target is a uric acid deposit that can be
XX disrupted by activation of the nanostructure, as well as bone injuries
XX and cancer. Furthermore, the target can consist of a microorganism
XX containing a strand of viral DNA, such that heating the nanostructure can
XX destroy the microorganism, which in turn can be used therapeutically to
XX treat HIV patients. This polypeptide sequence is the human erb-B protein
XX that is over expressed in human breast tumour cells and therefore acts as
XX target for a nanostructure of the invention.

XX Sequence 1255 AA;
Query Match 100.0%; Score 6812; DB 6; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MELAALCRWGLLALLPPGAASCTGCTDMKRLPASPEHLDMLRHLRYGQCVQGNL 60
Db 1 MELAALCRWGLLALLPPGAASCTGCTDMKRLPASPEHLDMLRHLRYGQCVQGNL 60
Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHNOVRQVPLQRLRIVRGTFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLSFLQDIQEVQGYVLIHNOVRQVPLQRLRIVRGTFEDNYALAVLDNG 120

Qy 121 DPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRPOLCYQDTILWKDIFHKNNQLA 180
Db 121 DPLNNTTPVTGASPGGLRELQLRSLTEILKGGVLIQRPOLCYQDTILWKDIFHKNNQLA 180
Qy 181 LTLIDNRSRACHPCSPMKSGRCWGSSESDCSLRTTVAGGACARCKGPLPTDCCHQEC 240
Db 181 LTLIDNRSRACHPCSPMKSGRCWGSSESDCSLRTTVAGGACARCKGPLPTDCCHQEC 240
Qy 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
Db 241 AAGCTGPKHSDCLACLHFNHSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
Qy 301 YNYLSTDVGSCTLVCPHNOEVAEDGTQRCCKSPCARVCYGLGNEHLREVRVAVTSAN 360
Db 301 YNYLSTDVGSCTLVCPHNOEVAEDGTQRCCKSPCARVCYGLGNEHLREVRVAVTSAN 360
Qy 361 IQBFAGCKKIFGSLAFPLPESFDGDPASNTAPLQPEQLQVPEETLEETIGYIYISAWPDSLP 420
Db 361 IQBFAGCKKIFGSLAFPLPESFDGDPASNTAPLQPEQLQVPEETLEETIGYIYISAWPDSLP 420
Qy 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLSLRELGLSLALIHNTHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSILTQGLGISWGLSLRELGLSLALIHNTHLCFVHTV 480
Qy 481 PWDQLFRNPHOALLHTANRPEDECVGEGACHOLCARGHCWGPGPTOCVNCSPQLRGQEC 540
Db 481 PWDQLFRNPHOALLHTANRPEDECVGEGACHOLCARGHCWGPGPTOCVNCSPQLRGQEC 540
Qy 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADQCVCAHYKDPFCVAVC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADQCVCAHYKDPFCVAVC 600
Qy 601 PSGVKPDLSPYIWKFPDEGACQPCPINCTHSCVDLDDKGCAPQASPLTSIVSAVVG 660
Db 601 PSGVKPDLSPYIWKFPDEGACQPCPINCTHSCVDLDDKGCAPQASPLTSIVSAVVG 660
Qy 661 ILLVVLGVVFGILIKRQOKIRKYTMRLLOQTELVEPLTPSGAMPNQAMRLIKETEL 720
Db 661 ILLVVLGVVFGILIKRQOKIRKYTMRLLOQTELVEPLTPSGAMPNQAMRLIKETEL 720
Qy 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTPSPKANKETLDSAYVMAGVSP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTPSPKANKETLDSAYVMAGVSP 780
Qy 781 YVSRLLIGICLTSTVQLTQMPYGLLDHVRNRLGSDQLLNCWQIAKGSYLEDVR 840
Db 781 YVSRLLIGICLTSTVQLTQMPYGLLDHVRNRLGSDQLLNCWQIAKGSYLEDVR 840
Qy 841 LVHRDLAARNVLKSPNHVKITDIFGLARLLDIDETEVHADGGKVPKIMMALESILRRFT 900
Db 841 LVHRDLAARNVLKSPNHVKITDIFGLARLLDIDETEVHADGGKVPKIMMALESILRRFT 900
Qy 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVYIMVAKWM 960
Db 901 HQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVYIMVAKWM 960
Qy 961 IDSECRPRFRELVSERSMARDPQRFVIONEDLGPASPLDSTFYRSLLEDMDGLVDA 1020
Db 961 IDSECRPRFRELVSERSMARDPQRFVIONEDLGPASPLDSTFYRSLLEDMDGLVDA 1020
Qy 1021 EYLVPOQGFPCPDAPAGGMVHHRSSSTSBGGLTLGLEPSEEAAPRSLAPSEG 1080
Db 1021 EYLVPOQGFPCPDAPAGGMVHHRSSSTSBGGLTLGLEPSEEAAPRSLAPSEG 1080
Qy 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGDLGMAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGVVAPLTCSPQPEYV 1140
Qy 1141 NQPDVRPQPPSPREGPIIPAAAPAGATLERAKTILSPGKNGVVKVFAFGGAVENPEYITPQ 1200
Db 1141 NQPDVRPQPPSPREGPIIPAAAPAGATLERAKTILSPGKNGVVKVFAFGGAVENPEYITPQ 1200

QY 1201 GGAAPQHPPPAFSPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYILGLDVPV 1255
DB 1201 GGAAPQHPPPAFSPAFDNLVYWDQPPRGAPPPSTFKGTPTAENPEYILGLDVPV 1255

RESULT 11
ID ADA37255
XX ADA37255 standard; protein; 1255 AA.
AC ADA37255;
XX
DT 20-NOV-2003 (first entry)
XX Human ErbB2 amino acid sequence SEQ ID NO:5.
XX
XX crystal; epithelial growth factor; EGF;
KW epithelial growth factor receptor; EGFR; cytostatic; hepatotropic;
KW antiulcer; antidiabetic; dermatological; antiparkinsonian; fungicide;
KW cancer; cancer proliferation; liver function disorder; ulcer;
KW Parkinson's disease; bone resorption disorder; ringworm; human;
KW protein co-ordinate data; ErbB2.
XX
XX Homo sapiens.
XX
XX WO2003066677-A1.
XX
XX 14-AUG-2003.
XX
XX 12-SEP-2002; 2002WO-JP009332.
XX
XX 05-FEB-2002; 2002JP-00028780.
XX
XX (NISC-) JAPAN SCI & TECHNOLOGY CORP.
PA (RIKE) RIKEN KK.
PA (MOCH) MOCHIDA PHARM CO LTD.
XX
XX Yokoyama S, Ogiso H, Shirouzu M, Nureki O, Ishitani R, Saito K;
PI Matsusue T, Nakao N, Muramatsu H, Shinozaki M;
XX WPI; 2003-627750/59.
XX
XX Crystalline complex of epithelial growth factor with its receptor for
PI design of ligands and antibodies to the receptor for treatment of ulcers,
PT cancer and Parkinson's diseases.
PT
XX Example 4; Page 442-450; 489pp; Japanese.
XX
XX The present invention describes crystals of a complex (C) of epithelial
CC growth factor (EGF) with epithelial growth factor receptor (EGFR),
CC containing a dimer of a complex of EGF with EGFR in the molar ratio 1:1.
CC Also described: (1) preparation of EGFR which can be crystallised, in
CC which recombinant EGFR is prepared using Lec8 cells and then
CC deglycosylated using glycosidase; (2) preparation of a complex of EGFR
CC with EGF or with another EGFR activity regulator (I), in which
CC crystallisable EGFR is contacted with EGF or (I); (3) screening potential
CC (I) by determining the fit of the 3D structure of (I) to that of the EGF-
CC EGFR complex; (4) substances obtained by the screening method for use as
CC agonists and antagonists of EGFR; (5) screening EGF or EGFR mutants
CC having an amino acid mutation in the EGFR dimerisation region or in the
CC EGF-EGFR interaction site, by comparing their 3D structure to that of EGF
CC -EGFR; (5) design of epitopes using the 3D structure of the EGF-EGFR
CC complex; (6) preparation of anti-EGF or anti-EGFR antibodies using the
CC epitopes identified; (7) anti-EGF or anti-EGFR antibodies prepared by
CC this method; and (8) polypeptides and their salts containing all or part
CC of the amino acid sequence of the EGFR dimerisation site. (C) has
CC cytostatic, hepatotropic, antiulcer, antidiabetic, dermatological,
CC antiparkinsonian and fungicide activities. (C) can be used in the
CC identification of agonists and antagonists of EGFR for use in the
CC treatment and prevention of cancer and cancer proliferation, liver
CC function disorders, ulcers (including stomach ulcer, skin ulcer and ulcer
CC arising from diabetic complications), Parkinson's disease, bone
CC resorption disorders and ringworm. The present sequence represents a
CC human ErbB2 amino acid sequence, which is used in the exemplification of

CC the present invention.
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6812; DB 7; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 MELAALCRWGLLLALLPPGAASQTCTGTDMLRLPASPETHLDMLRHLYQGCVVQGNL 60
DB 1 MELAALCRWGLLLALLPPGAASQTCTGTDMLRLPASPETHLDMLRHLYQGCVVQGNL 60
QY 61 ELTYLPTNASLSFLODIQEVQGVVLIHAHQVQPLQRLRIVRGTLQEDNVALAVLDNG 120
DB 61 ELTYLPTNASLSFLODIQEVQGVVLIHAHQVQPLQRLRIVRGTLQEDNVALAVLDNG 120
QY 121 DFLNNTTPTVTGASPGGLRELQRLSTEILKGGVLIQRPQLCYQDTILWKDIFHKKNQLA 180
DB 121 DFLNNTTPTVTGASPGGLRELQRLSTEILKGGVLIQRPQLCYQDTILWKDIFHKKNQLA 180
QY 181 LTLIDTNRSRACHPCSPCKSGRCWGESSEDQSLTRTVCAAGCARCKGPLETDCHEQC 240
DB 181 LTLIDTNRSRACHPCSPCKSGRCWGESSEDQSLTRTVCAAGCARCKGPLETDCHEQC 240
QY 241 AAGCTGPKHSDCLACLFHNHSGICELHCPALVTYNTDTPESMPNDEGRYTFGASCVTACP 300
DB 241 AAGCTGPKHSDCLACLFHNHSGICELHCPALVTYNTDTPESMPNDEGRYTFGASCVTACP 300
QY 301 YNYLSTDVGSCTLVCPFLHNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSAN 360
DB 301 YNYLSTDVGSCTLVCPFLHNQEVTAEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSAN 360
QY 361 IOEPAGCKKIFGSLAPLPESFDGDPASNTAPLOPQLQVFTELEITGYLYISAMPDLSLP 420
DB 361 IOEPAGCKKIFGSLAPLPESFDGDPASNTAPLOPQLQVFTELEITGYLYISAMPDLSLP 420
QY 421 DLSVFQNLQVIRGRILHNGAYSLTIQGLGISWGLRSLRELGSGLALIHNNHLCFVHTV 480
DB 421 DLSVFQNLQVIRGRILHNGAYSLTIQGLGISWGLRSLRELGSGLALIHNNHLCFVHTV 480
QY 481 PWDQFLRPHQALLHTANRPEDECYVGEGLACHQLCARGHCWGPGTQVCNCSQFLRGQBC 540
DB 481 PWDQFLRPHQALLHTANRPEDECYVGEGLACHQLCARGHCWGPGTQVCNCSQFLRGQBC 540
QY 541 VECECVLOGLPREYVNHARHCLPCHPECPONGSVTCFGEADQCVACAHYKDPFFCVARC 600
DB 541 VECECVLOGLPREYVNHARHCLPCHPECPONGSVTCFGEADQCVACAHYKDPFFCVARC 600
QY 601 PSGVKPDLISYMPIWKFPDDEGACQPCPINCTHSCVDLDDKGCPAEORASPLTSIYSAVVG 660
DB 601 PSGVKPDLISYMPIWKFPDDEGACQPCPINCTHSCVDLDDKGCPAEORASPLTSIYSAVVG 660
QY 661 ILLVVLGVVFGILIKRRQOKIRKYTMRLLOTELVEPLTPSGAMPNQAQRILKETEL 720
DB 661 ILLVVLGVVFGILIKRRQOKIRKYTMRLLOTELVEPLTPSGAMPNQAQRILKETEL 720
QY 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYMAGVGSF 780
DB 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVIRENTSPKANKEILDEAYMAGVGSF 780
QY 781 VYSRLIGLICLTSTVOLVTQLMYPYGLLDHVRNRRGLSGQDLNLCWCMQAKGMSYLEDVR 840
DB 781 VYSRLIGLICLTSTVOLVTQLMYPYGLLDHVRNRRGLSGQDLNLCWCMQAKGMSYLEDVR 840
QY 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKKNWMALESILRRRT 900
DB 841 LVHRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPKKNWMALESILRRRT 900
QY 901 HQSDVMSYGVTVWELMTFGAKYDGIIPAREIPDLLEKGERLPQPPICITDVMWVKWM 960
DB 901 HQSDVMSYGVTVWELMTFGAKYDGIIPAREIPDLLEKGERLPQPPICITDVMWVKWM 960
QY 961 IDSECRPRPRELVSEFSRWARDPQRFVVTQNEDLGPASPLDSTFVRSILLEDDEDDMGDLVDA 1020

Db 961 IDSECRPRFELVSEFARMARDPQRFVVIQWEDLGASPLDSTFYRSLLEDMDGLDVA 1020
Qy 1021 EYLIVPOGFCPPAPGAGWVHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Db 1021 EYLIVPOGFCPPAPGAGWVHRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEG 1080
Qy 1081 AGSDVFDGLGMGAAGLQSLPHTDPSPLQRYSDPTVPLPSETDGYVAPLTCSPQPEYV 1140
Db 1081 AGSDVFDGLGMGAAGLQSLPHTDPSPLQRYSDPTVPLPSETDGYVAPLTCSPQPEYV 1140
Qy 1141 NQDVRQPPSPRGPPLPAARPAAGATLERAKTLSPGKGVVVDVAFGGAVENPEYLTQP 1200
Db 1141 NQDVRQPPSPRGPPLPAARPAAGATLERAKTLSPGKGVVVDVAFGGAVENPEYLTQP 1200
Qy 1201 GGAAPQHPPPAFPAFDNLYWDDPPERGAPSTFKGTAEENPEYLGIDVVPV 1255
Db 1201 GGAAPQHPPPAFPAFDNLYWDDPPERGAPSTFKGTAEENPEYLGIDVVPV 1255

RESULT 12
ID ADB67621 standard; protein; 1255 AA.
XX ADB67621;
AC ADB67621;
XX
DT 04-DEC-2003 (first entry)
XX
DE Human epidermal growth factor receptor 2 protein.
XX
KW cystostatic; human epidermal growth factor receptor-3; HER-3; heregulin;
KW HER2; tyrosine kinase activity; cancer; receptor.
XX
OS Homo sapiens.
XX
PN WO2003011897-A1.
XX
PD 13-FEB-2003.
XX
PF 29-JUL-2002; 2002WO-US023963.
XX
PR 27-JUL-2001; 2001US-0308341P.
XX
PA (REGC) UNIV CALIFORNIA.
XX
PI Singer E, Landgraf R, Slamon DJ, Eisenberg D;
XX
DR WPI; 2003-300482/29.
DR N-PSDB; ADB67620.
XX
PT Novel human epidermal growth factor receptor 3 variant as agonist or
PT antagonist of HER3 receptor, for diagnosis/treatment of cells or
PT pathological conditions associated with aberrant expression of heregulin
PT or HER3.
XX
PS Disclosure; Page 81-82; 137pp; English.
XX
CC The invention relates to a non-naturally occurring human epidermal growth
CC factor receptor (HER)-3 variant polypeptide comprising amino acids 19-329
CC or 20-329 of the 1342 amino acid HER3 polypeptide (ADB67617) or a
CC sequence which differs from native HER3 polypeptide and having amino acid
CC substitutions at residues E43, N44, K51, E64, V66 and V110 of S1, is new.
CC The variant HER-3 specifically binds to the heregulin polypeptide
CC (ADB67619), exhibits an impaired ability to interact with HER2
CC polypeptide (ADB67621), or has an ability to inhibit the interaction
CC between wild-type HER3 and heregulin. The polypeptide is useful for
CC identifying a compound which specifically binds to heregulin binding
CC domain in a HER3 variant polypeptide. The method further involves
CC determining whether the test compound inhibits or enhances the heregulin
CC induced tyrosine kinase activity associated with a HER3 polypeptide. The
CC polypeptide is also useful for determining whether a test compound
CC modulates the interaction between a heregulin polypeptide, and the
CC variant HER-3 polypeptide. The HER-3 polypeptide is also useful for

CC inhibiting the interaction between a heregulin polypeptide and HER3
CC polypeptide, e.g. for treating cancer. The polypeptide is also useful for
CC stimulating or activating HER3 receptor. This sequence represents the
CC wild type human HER-2 polypeptide.
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6812; DB 7; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 MELAALCRWGLLLALLPPGAASTQVCTGTDMLKRLPASPEHLDMLRHLYQGQVQGNL 60
Db 1 MELAALCRWGLLLALLPPGAASTQVCTGTDMLKRLPASPEHLDMLRHLYQGQVQGNL 60
Qy 61 ELTYLPTNASLFLQDIQEVGVYLAHNOVROVPLQRLIRVGTQLFEDNYALAVLDNG 120
Db 61 ELTYLPTNASLFLQDIQEVGVYLAHNOVROVPLQRLIRVGTQLFEDNYALAVLDNG 120
Qy 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDITLWKDI FHKNNOLA 180
Db 121 DPLNNTTPTVTGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDITLWKDI FHKNNOLA 180
Qy 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVCCAGCARCKGPLTDCCHQC 240
Db 181 LTLIDTNRSRACHPCSPMCKSGRCWGESSEDCQSLTRTVCCAGCARCKGPLTDCCHQC 240
Qy 241 AAGCTGPKSDCLACLFHFNHSGICELHCPALVYNTDTFESMPNPGRYTFGASCVTACP 300
Db 241 AAGCTGPKSDCLACLFHFNHSGICELHCPALVYNTDTFESMPNPGRYTFGASCVTACP 300
Qy 301 YNYLSTDVSGCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Db 301 YNYLSTDVSGCTLVCPHNOEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSAN 360
Qy 361 IQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQEQVFEETLEETIGYLYISAWPDSL 420
Db 361 IQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQEQVFEETLEETIGYLYISAWPDSL 420
Qy 421 DLSVFQNLQVIRGRILHNGAYSLTQGLGTSWGLSLRELGLSLALIHNTLHLCFVHTV 480
Db 421 DLSVFQNLQVIRGRILHNGAYSLTQGLGTSWGLSLRELGLSLALIHNTLHLCFVHTV 480
Qy 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAACHQLCARGHCWGPGTQVNCSPFLRQEC 540
Db 481 PWDQLFRNPHQALLHTANRPEDECVGEGLAACHQLCARGHCWGPGTQVNCSPFLRQEC 540
Qy 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCVCAHYKDPFPCVARC 600
Db 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCVCAHYKDPFPCVARC 600
Qy 601 PSGVKPDLVMPYTWKPFDEBAGACQPCPINCSTHSCVDLDDKGCAPQASPLTSIVSAVG 660
Db 601 PSGVKPDLVMPYTWKPFDEBAGACQPCPINCSTHSCVDLDDKGCAPQASPLTSIVSAVG 660
Qy 661 ILVAVLVGVVFGILIKRQOKIRKTYMRRLLQETVELPELTPSGAMPNQAMRILKETEL 720
Db 661 ILVAVLVGVVFGILIKRQOKIRKTYMRRLLQETVELPELTPSGAMPNQAMRILKETEL 720
Qy 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSFPKANKETLDEAYVMAGVSP 780
Db 721 RKVKVLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRENTSFPKANKETLDEAYVMAGVSP 780
Qy 781 YVSRLLGICLTSTVQLVTQMLPYGCLLDHVRNRRGLSGDOLLNWCQIAKGSYLEDVR 840
Db 781 YVSRLLGICLTSTVQLVTQMLPYGCLLDHVRNRRGLSGDOLLNWCQIAKGSYLEDVR 840
Qy 841 LVHRDLAARNVLKSPNNHVKITDPGLARLLDIDETEHADGGKVPKIMWALESILRRRFT 900
Db 841 LVHRDLAARNVLKSPNNHVKITDPGLARLLDIDETEHADGGKVPKIMWALESILRRRFT 900
Qy 901 HQSDVMSYGVYTWELMTFFAKPYDGPAREIPDLLEKGERLPPOPICTIDVYIMVWCWM 960
Db 901 HQSDVMSYGVYTWELMTFFAKPYDGPAREIPDLLEKGERLPPOPICTIDVYIMVWCWM 960

Db 901 HQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPOPPICITIDVYIMVKWM 960
 QY 961 IDSECRPRFRELVSERSMARDPQRFVVIQNEIDLGASPLDSTFYRSLLDEDDMDGLVDA 1020
 Db 961 IDSECRPRFRELVSERSMARDPQRFVVIQNEIDLGASPLDSTFYRSLLDEDDMDGLVDA 1020
 QY 1021 EYLVPQOQFFCPDPAPGAGMWHHRSSSTSGGDLTLGLEPSEERAPRSLAPSEG 1080
 Db 1021 EYLVPQOQFFCPDPAPGAGMWHHRSSSTSGGDLTLGLEPSEERAPRSLAPSEG 1080
 QY 1081 AGSDVFDGDLGMAAGKLSLPHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140
 Db 1081 AGSDVFDGDLGMAAGKLSLPHDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV 1140
 QY 1141 NQPDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
 Db 1141 NQPDVRPQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTQ 1200
 QY 1201 GGAPOPHPPAPSPAFDNLVYWDQDPPRGAPPSTFKGTPTAENPEYLGLDVVP 1255
 Db 1201 GGAPOPHPPAPSPAFDNLVYWDQDPPRGAPPSTFKGTPTAENPEYLGLDVVP 1255

RESULT 13

ADH13187

ID ADH13187 standard; protein; 1255 AA.

XX AC ADH13187;

XX AC

XX DT 11-MAR-2004 (first entry)

XX XX

XX DE Human malignant neoplasia-related protein SeqID36.

XX KW malignant neoplasia; cytostatic; breast cancer; ovarian cancer;

XX KW gastric cancer; colon cancer; esophageal cancer; mesenchymal cancer;

XX KW bladder cancer; non-small cell lung cancer; human.

XX OS Homo sapiens.

XX XX

XX PN EP1365034-A2.

XX XX

XX PD 26-NOV-2003.

XX XX

XX PF 09-MAY-2003; 2003EP-00010447.

XX XX

XX PR 21-MAY-2002; 2002EP-00010291.

XX PR

XX PR 13-FEB-2003; 2003EP-00003112.

XX XX

XX PA (FARB) BAYER AG.

XX XX

XX PI Wirtz R, Munnes M, Kallabis H;

XX XX

XX WPI; 2004-073279/08.

XX DR N-PSDB; ADH13161.

XX XX

XX PT Predicting, diagnosing or prognosing malignant neoplasia by detecting at

XX PT least two markers, where the markers are genes from one or more

XX PT chromosomal regions altered in malignant neoplasia.

XX XX

XX PS Claim 12; SEQ ID NO 36; 267pp; English.

XX XX

XX CC This invention relates to a novel method for the prediction, diagnosis,

XX CC or prognosis of malignant neoplasia by the detection of at least two

XX CC markers. The invention may also be useful for the development of

XX CC cytostatic compounds through the regulation of the expression of a gene

XX CC or activity of a protein associated with malignant neoplasia. The method

XX CC is useful for prediction, diagnosis or prognosis of malignant neoplasia

XX CC such as breast cancer, ovarian cancer, gastric cancer, colon cancer,

XX CC esophageal cancer, mesenchymal cancer, bladder cancer or non-small cell

XX CC lung cancer. The polynucleotides and polypeptides defined in the

XX CC specification, antisense polynucleotides targeting the polynucleotides,

XX CC antibodies targeting either one of the polynucleotides or polypeptides,

XX CC and compounds identified by the screening methods are useful for

CC preventing or treating malignant neoplasia. The disease treated is
 CC preferably breast cancer. The present sequence is that of a human
 CC malignant neoplasia-related protein which may be used in the method of
 CC the invention.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6812; DB 8; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLALLPPGAASCTCTGDMKRLPASPETHLDMRLHYQSCVVQGNL 60

Db 1 MELAALCRWGLLALLPPGAASCTCTGDMKRLPASPETHLDMRLHYQSCVVQGNL 60

QY 61 ELTYLPTNASLSFLQDIQEVQGYVLIAHNQVQVPLQRLRIRVGTQLPEDNYALAVLDNG 120

Db 61 ELTYLPTNASLSFLQDIQEVQGYVLIAHNQVQVPLQRLRIRVGTQLPEDNYALAVLDNG 120

QY 121 DPLNNTTPTVTGASPGGLRELQRLSLEILKGGVLIQORNPOLCYQDTILWKDIFHKNNQLA 180

Db 121 DPLNNTTPTVTGASPGGLRELQRLSLEILKGGVLIQORNPOLCYQDTILWKDIFHKNNQLA 180

QY 181 LTLIDTNSRACHPCSPMKSGRCWGESSEDCQSLTRTVCAAGCARCKGPLTDCCHEOC 240

Db 181 LTLIDTNSRACHPCSPMKSGRCWGESSEDCQSLTRTVCAAGCARCKGPLTDCCHEOC 240

QY 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300

Db 241 AAGCTGPKHSDCLACLFHFNHSGICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACP 300

QY 301 YNYLSTDVGSCTLVCPLNHNEVTAEDGTQRCBKPCARVCYGLGMEHLREVRVTSAN 360

Db 301 YNYLSTDVGSCTLVCPLNHNEVTAEDGTQRCBKPCARVCYGLGMEHLREVRVTSAN 360

QY 361 IQEFAGCKKI FGSALFPLPESPDGPASNTAPLQEQVFELEETGLTYLISAMPDSLUP 420

Db 361 IQEFAGCKKI FGSALFPLPESPDGPASNTAPLQEQVFELEETGLTYLISAMPDSLUP 420

QY 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWGLRSRELGLSLALIHNNTHLCFVHTV 480

Db 421 DLSVFQNLQVIRGRILHNGAYSLTLQGLGISWGLRSRELGLSLALIHNNTHLCFVHTV 480

QY 481 PWDQLFRPHQALLHTANRPEDECVGBGLACHOLCARGHCWGPPTQVCNCSQFIRGQBC 540

Db 481 PWDQLFRPHQALLHTANRPEDECVGBGLACHOLCARGHCWGPPTQVCNCSQFIRGQBC 540

QY 541 VEECRVLQGLPREYVNAHRLCPCHPECPONGSVTCFGEADQCVACAHYKDPFPCVARC 600

Db 541 VEECRVLQGLPREYVNAHRLCPCHPECPONGSVTCFGEADQCVACAHYKDPFPCVARC 600

QY 601 PSGVKPDLSPYMP IWKFPDEEGACQPCINCTHSCVDLDDKGCAPASPLTSIYSAVVG 660

Db 601 PSGVKPDLSPYMP IWKFPDEEGACQPCINCTHSCVDLDDKGCAPASPLTSIYSAVVG 660

QY 661 ILLVVVLGVVFGILLKRRQOKIRKYMRLLOETELVEPLTPSGAMPNOAQRILKETEL 720

Db 661 ILLVVVLGVVFGILLKRRQOKIRKYMRLLOETELVEPLTPSGAMPNOAQRILKETEL 720

QY 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVALKVLRENTSPKANKEIILDEAYVMAGVGS 780

Db 721 RKVKVLGSGAGFTVYKGIWIPDGENVKIPVALKVLRENTSPKANKEIILDEAYVMAGVGS 780

QY 781 YVSRLLGICLTSTVQLVTQLMFYGCLLDHVRNRRGLSQDILLNCWQIAKMSYLEDYR 940

Db 781 YVSRLLGICLTSTVQLVTQLMFYGCLLDHVRNRRGLSQDILLNCWQIAKMSYLEDYR 940

QY 841 LVHRDLAARNVLKSPNHNKITTDFGLARLLDIDETEHADGKGKVIKWALESILRRRT 900

Db 841 LVHRDLAARNVLKSPNHNKITTDFGLARLLDIDETEHADGKGKVIKWALESILRRRT 900

QY 901 HQSDVMSYGVTVWELMTFGAKPYDGPAREIPDLLEKGERLPOPPICITIDVYIMVKWM 960

Db 901 HQSDVWSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICTIDVYIMVWKWM 960
 Qy 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020
 Db 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020
 Qy 1021 EYLVPQGFPCPDPAFCAGQWHRHRSSTRSGGDLTLGLPSEEEAPRSPAPSEG 1080
 Db 1021 EYLVPQGFPCPDPAFCAGQWHRHRSSTRSGGDLTLGLPSEEEAPRSPAPSEG 1080
 Qy 1081 AGSDVEFDGLGMAKGLQSLTHDPSPLOKRYSEDPTVPLPSETDGVVAPLTCSPOPEYV 1140
 Db 1081 AGSDVFDGLGMAKGLQSLTHDPSPLOKRYSEDPTVPLPSETDGVVAPLTCSPOPEYV 1140
 Qy 1141 NQPDVRQPSPREGPLPAARPAATLERAKTLSPGKNGVVKDVFAGGAVENPEYLTPO 1200
 Db 1141 NQPDVRQPSPREGPLPAARPAATLERAKTLSPGKNGVVKDVFAGGAVENPEYLTPO 1200
 Qy 1201 GGAAPQHPHPPAFSPADNLYWDDPPERGAPSTFKGTPTAENPYGLDVPV 1255
 Db 1201 GGAAPQHPHPPAFSPADNLYWDDPPERGAPSTFKGTPTAENPYGLDVPV 1255

RESULT 14

ADM72831
 ID ADM72831 standard; protein; 1255 AA.

AC ADM72831;

DT 03-JUN-2004 (first entry)

DE Human Her2/Neu protein SEQ ID NO:90.

KW epitope; epitope cluster; virucide; cytostatic; vaccine; viral infection;
 KW cancer; tumour; human; Her2-Neu.

OS Homo sapiens.

PN WO2004022709-A2.

PD 18-MAR-2004.

PF 05-SEP-2003; 2003WO-US027706.

PR 06-SEP-2002; 2002US-0409123P.

PA (MANN-) MANNKIND CORP.

PI Simard JDL, Diamond DC, Liu L, Liu Z;

DR WPI; 2004-315564/29.

DR N-PSDB; ADM72832.

XX New polypeptides and encoding nucleic acids that are useful epitopes of
 PT target-associated antigens, useful for diagnosing and/or treating viral
 PT infections, cancers and tumors.

XX Disclosure; SEQ ID NO 90; 357pp; English.

XX The present invention describes a polypeptide (I) comprising a component
 CC selected from: (a) a polypeptide epitope having any of the 503 fully
 CC defined sequences of 8-33 amino acids (SEQ ID NO:108-610); (b) an epitope
 CC cluster comprising the polypeptide of (a); (c) a polypeptide having
 CC substantial similarity to (a) or (b); (d) a polypeptide having functional
 CC similarity to any of (a)-(c); or (e) a nucleic acid encoding the
 CC polypeptide of (a)-(d). (I) has virucide and cytostatic activities, and
 CC can be used in vaccines. The methods and compositions of the present
 CC invention are useful for the diagnosis and/or treatment of viral
 CC infections, cancers and tumors. The present sequence is used in the
 CC exemplification of the present invention.

XX Sequence 1255 AA;

Qy 1021 EYLVPQGFPCPDPAFCAGQWHRHRSSTRSGGDLTLGLPSEEEAPRSPAPSEG 1080

Query Match 100.0%; Score 6812; DB 8; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1255; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLKRLPASPEHLDMRLHLYVQCCVQVGNL 60
 Db 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLKRLPASPEHLDMRLHLYVQCCVQVGNL 60
 Qy 61 ELYLTPNASLFLQDIQEVQGVYLAHNOVROVPLQRLIRVGTQQLFEDNYALAVLDNG 120
 Db 61 ELYLTPNASLFLQDIQEVQGVYLAHNOVROVPLQRLIRVGTQQLFEDNYALAVLDNG 120
 Qy 121 DPLNNTPTVTCASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDTILWKDIFHKNNQLA 180
 Db 121 DPLNNTPTVTCASPGGLRELQRLSLTEILKGGVLIQRNPOLCYQDTILWKDIFHKNNQLA 180
 Qy 181 LTLIDNRSACHPCSPMKCGKSCWGESSEDCSLTRTVAGGCARCKGPLPTDCCHQEC 240
 Db 181 LTLIDNRSACHPCSPMKCGKSCWGESSEDCSLTRTVAGGCARCKGPLPTDCCHQEC 240
 Qy 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
 Db 241 AAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACP 300
 Qy 301 YNYLSTDVSGCTLVCPLNQEVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTSAN 360
 Db 301 YNYLSTDVSGCTLVCPLNQEVTAEDGTQRCCKSPCARVCYGLGMEHLREVRVTSAN 360
 Qy 361 IQPFAGCKIFGSLAFLPESFDGDPASNTAPLOEQLOVPFETLEETGYLYISAWPOSPLP 420
 Db 361 IQPFAGCKIFGSLAFLPESFDGDPASNTAPLOEQLOVPFETLEETGYLYISAWPOSPLP 420
 Qy 421 DLSVFQNLQVIRGRIILHNGAYSITLQGLGISWLGSLRELGLSLALIHNTHLCFVHTV 480
 Db 421 DLSVFQNLQVIRGRIILHNGAYSITLQGLGISWLGSLRELGLSLALIHNTHLCFVHTV 480
 Qy 481 PWDQLFRNPHQALLHTANRDECEVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRQEC 540
 Db 481 PWDQLFRNPHQALLHTANRDECEVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRQEC 540
 Qy 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCVCAHYKDPFCVVARC 600
 Db 541 VEECRVLQGLPREYVNAHCLPCHPECQONGSVTCFGEADQCVCAHYKDPFCVVARC 600
 Qy 601 PSGVKPDLSPYMPIWKPEDEGACQPCINCTHSCVDLDDKGCAPAEQASPLTSTVSAVG 660
 Db 601 PSGVKPDLSPYMPIWKPEDEGACQPCINCTHSCVDLDDKGCAPAEQASPLTSTVSAVG 660
 Qy 661 ILLVWLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRLKETEL 720
 Db 661 ILLVWLGVVFGILIKRQOKIRKYTWRRLLQETELVEPLTPSGAMPNQAMRLKETEL 720
 Qy 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETILDYAVMAGVGP 780
 Db 721 RKVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVLRNTSPKANKETILDYAVMAGVGP 780
 Qy 781 YVSRLLGICLTSTVQLTQMPYGCILLDHVRENRGLSGODLLNWCQIAKGSYLEDVR 840
 Db 781 YVSRLLGICLTSTVQLTQMPYGCILLDHVRENRGLSGODLLNWCQIAKGSYLEDVR 840
 Qy 841 LVHRDLAARNVLKSPNHNKIPDFGLARLDDIETEHADGGKVPKMALESILRRRFT 900
 Db 841 LVHRDLAARNVLKSPNHNKIPDFGLARLDDIETEHADGGKVPKMALESILRRRFT 900
 Qy 901 HQSDVWSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICTIDVYIMVWKWM 960
 Db 901 HQSDVWSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPPICTIDVYIMVWKWM 960
 Qy 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020
 Db 961 IDSECRPRFRELVSFSESRMARDPQRFVVIQNEIDLGPASPLDSTFYRSILLEDDMDGLVDA 1020

Qy	1021	EEYLVQGGFCPPDPAPCAGGMVHHRSSSTRSGGDLTLGLEPSEEEAPRSPAPSEG	1080
Db	1021	EEYLVQGGFCPPDPAPCAGGMVHHRSSSTRSGGDLTLGLEPSEEEAPRSPAPSEG	1080
Qy	1081	AGSDVFDGDLGMGAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV	1140
Db	1081	AGSDVFDGDLGMGAAGLQSLPHTDPSPLQRYSEDPTVPLPSETDGYVAPLTCSPQPEYV	1140
Qy	1141	NQPDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKDVAFGGAVENPEYLTPO	1200
Db	1141	NQPDVRQPPSPREGPLPAARPAAGATLERAKTILSPGKNGVVKDVAFGGAVENPEYLTPO	1200
Qy	1201	GGAAPQHPPPPAFSPFDNLYYWDQDPPERGAPSTFKGTPTAENPEYLGLDVFPV	1255
Db	1201	GGAAPQHPPPPAFSPFDNLYYWDQDPPERGAPSTFKGTPTAENPEYLGLDVFPV	1255

Search completed: January 25, 2005, 21:23:22
Job time : 138.725 secs

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GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:16:15 ; Search time 36.1624 Seconds
(without alignments)
3277.960 Million cell updates/sec

Title: US-09-806-703A-4_COPY_24_1255

Perfect score: 6694

Sequence: 1 QVCTGTDMLRLPASPETHL.....TPKGTPTAENPEYLGLDVPV 1232

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_79.*

1: PIR1.*

2: PIR2.*

3: PIR3.*

4: PIR4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Match	Length	DB	ID	Description
1	6688	99.9	1255	1	A24571	protein-tyrosine k
2	5894.5	88.1	1254	2	I48161	p-185 precursor -
3	5889	88.0	1260	1	TVRTNU	protein-tyrosine k
4	3157	47.2	1210	1	GOHUE	epidermal growth f
5	3134	46.8	1210	2	A53183	epidermal growth f
6	3118.5	46.6	1223	1	TVCHLV	epidermal growth f
7	2999.5	44.8	1308	2	A47253	epidermal growth f
8	2695	40.3	1166	1	S06142	protein-tyrosine k
9	2427.5	36.3	1342	2	A36223	kinase-related tra
10	2344	35.0	1339	2	JC4387	epidermal growth f
11	1766.5	26.4	698	1	TVFVLV	protein-tyrosine k
12	1703	25.4	604	1	TVYUHV	protein-tyrosine k
13	1652.5	24.7	1330	1	G0FFE	epidermal growth f
14	1647	24.6	544	2	S35745	protein-tyrosine k
15	1640	24.5	545	2	S00727	kinase-related tra
16	1623	24.2	540	2	B44776	protein-tyrosine k
17	1621	24.2	540	1	TVFVEB	protein-tyrosine k
18	1525.5	22.8	644	2	A36325	epidermal growth f
19	1302	19.5	1323	2	E88257	protein let-23 [im
20	1302	19.5	1374	2	S70712	protein-tyrosine k
21	1214	18.1	1369	2	S70713	protein-tyrosine k
22	1177	17.6	1717	1	A45558	epidermal growth f
23	1152.5	17.2	527	2	A42032	epidermal growth f
24	997.5	14.9	843	2	A27131	epidermal growth f
25	806.5	12.0	345	2	S13807	protein-tyrosine k
26	784.5	11.3	311	2	S13808	protein-tyrosine k
27	720.5	10.8	1363	2	T43220	insulin-like growt
28	716	10.7	1382	1	INHUR	insulin receptor p
29	708.5	10.6	1372	2	A34157	insulin receptor p

ALIGNMENTS

RESULT 1

A24571

protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human

N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming protein erb

C;Species: Homo sapiens (man)

C;Date: 25-Oct-1987 #sequence revision 06-Dec-1996 #text change 09-Jul-2004

C;Accession: A24571; A25491; A4188; B4188; I59509; I57622

R;Yamamoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Saito, T.;

Nature 319, 230-234, 1986

A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth

A;Reference number: A24571; MUID:86118663; PMID:3003577

A;Accession: A24571

A;Molecule type: mRNA

A;Residues: 1-1255 <IAMS>

A;Cross-references: UNIPROT:P04626; GB:X03363; NID:G31197; PIDN:CAA27060.1; PID:G31198

R;Semba, K.; Kamata, N.; Toyoshima, K.; Yamamoto, T.

Proc. Natl. Acad. Sci. U.S.A. 82, 6497-6501, 1985

A;Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epider

A;Reference number: A25491; MUID:86016729; PMID:2995967

A;Accession: A25491

A;Molecule type: DNA

A;Residues: 737-1031 <SEM>

A;Cross-references: GB:M11767; NID:G182163; PIDN:AAA35808.1; PID:G553282

R;Coussens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg,

Science 230, 1132-1139, 1985

A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chromo

A;Reference number: A44188; MUID:86070181; PMID:2999974

A;Accession: A44188

A;Molecule type: DNA

A;Residues: 740-910 <COU1>

A;Cross-references: GB:M12036; NID:G183988; PIDN:AAA35978.1; PID:G183989

A;Accession: B44188

A;Molecule type: mRNA

A;Residues: 1-517, 'RALL', 522, 'S', 524-654, 'V', 656-1169, 'A', 1171-1255 <COU2>

A;Cross-references: GB:M11730; NID:G183986

R;King, C.R.; Kraus, M.H.; Aaronson, S.A.

Science 229, 974-976, 1985

A;Title: Amplification of a novel v-erbB-related gene in a human mammary carcinoma.

A;Reference number: I59509; MUID:85272597; PMID:2992089

A;Accession: I59509

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 832-909 <REX>

A;Cross-references: GB:I29395; NID:G459807; PIDN:AAA35809.1; PID:G459808

R;Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, D.

Mol. Cell. Biol. 7, 2597-2601, 1987

A;Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptiona

A;Reference number: I57622; MUID:87286898; PMID:3039351

A;Accession: I57622

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-191 <TAL>

A; Cross-references: GB:M16792; NID:g183983; PIDN:AAA58637.1; PID:g553332
C; Comment: Amplification and overexpression of this erbB-related gene occurs in about 30
C; Genetics:
A; Gene: GDB:ERBB2; NGL; NEU; HER-2
A; Cross-references: GDB:120613; OMIM:164870
A; Map position: 17q21.1-17q21.1
A; Introns: 25/1; 75/3; 147/1; 883/3
A; Note: the list of introns is incomplete
C; Function:
A; Description: catalyzes the phosphorylation of a peptidyl tyrosine residue by ATP
C; Superfamily: epidermal growth factor receptor; protein kinase homology
C; Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phosphotyrosine
F; 1-21/Domain: signal sequence #status predicted <SIG>
F; 22-1255/Product: protein-tyrosine kinase erbB2 #status predicted <MAT>
F; 22-653/Domain: extracellular #status predicted <EXT>
F; 70-304/Domain: EGF receptor extracellular domain repeat <EE1>
F; 395-605/Domain: EGF receptor extracellular domain repeat <EE2>
F; 654-675/Domain: transmembrane #status predicted <TM>
F; 676-1255/Domain: intracellular #status predicted <INT>
F; 718-983/Domain: protein kinase homology <KIN>
F; 726-734/Region: protein kinase ATP-binding motif
F; 68,124,187,259,530,571,629/Binding site: carbohydrate (Asn) (covalent) #status predicted
F; 686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F; 753/Active site: Lys #status predicted
F; 1139,1221,1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation)
Query Match 99.9%; Score 6688; DB 1; Length 1255;
Best Local Similarity 99.8%; Pred. No. 1.8e-270;
Matches 1230; Conservative 1; Mismatches 1; Indels 0; Gaps 0;
QY 1 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYPNTASLSFLQDIOBVOGY 60
DB 24 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYPNTASLSFLQDIOBVOGY 83
QY 61 VLIHNVQVQVQLRIRVGTQLFEDNVALVLDNGDPLNNTPTVTGASPGGLRELQLR 120
DB 84 VLIHNVQVQVQLRIRVGTQLFEDNVALVLDNGDPLNNTPTVTGASPGGLRELQLR 143
QY 121 SLTEILKGGVLIQRNPOLCYQDTILWKDIFPKNNQALTLIDNTRACHPSPCMCKGR 180
DB 144 SLTEILKGGVLIQRNPOLCYQDTILWKDIFPKNNQALTLIDNTRACHPSPCMCKGR 203
QY 181 CWGESSEDCOSLTRTWCAGCARCKGPLEPTDCCHQCAAGCTCPKESDCLACLFHNSGI 240
DB 204 CWGESSEDCOSLTRTWCAGCARCKGPLEPTDCCHQCAAGCTCPKESDCLACLFHNSGI 263
QY 241 CELHCPALVTYNTDTFESMPNPGRTYTFGASCVTAPYNYLSTDVGSCTLVCPPLHNOEVT 300
DB 264 CELHCPALVTYNTDTFESMPNPGRTYTFGASCVTAPYNYLSTDVGSCTLVCPPLHNOEVT 323
QY 301 AEDGTQRCCKSPCARVCYGLGWEHLREVRVTSANIQEFACCKIFGSLAFLPSPFDG 360
DB 324 AEDGTQRCCKSPCARVCYGLGWEHLREVRVTSANIQEFACCKIFGSLAFLPSPFDG 383
QY 361 DPASNTAPLOPELOQVFTELEETIGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYSL 420
DB 384 DPASNTAPLOPELOQVFTELEETIGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYSL 443
QY 421 TLQGLGTSWLGSLRLSRELGSGLAIHHNTHLCFVHVTPWPDLPNPHQALLHTANPEDE 480
DB 444 TLQGLGTSWLGSLRLSRELGSGLAIHHNTHLCFVHVTPWPDLPNPHQALLHTANPEDE 503
QY 481 CVGEGLACHQLCARGHCWGPPTQCVNCSQFLRGQBCVEBCRVQLGLPREYNARHCLPC 540
DB 504 CVGEGLACHQLCARGHCWGPPTQCVNCSQFLRGQBCVEBCRVQLGLPREYNARHCLPC 563
QY 541 HPESCQPNQSVTCFGEADOCVACAHYKOPPCFVACPSGVKPDLSYMPITWKEPPDEGAC 600
DB 564 HPESCQPNQSVTCFGEADOCVACAHYKOPPCFVACPSGVKPDLSYMPITWKEPPDEGAC 623
QY 601 QPCFINCTHSCVDLDDKGCFAEQASPLTSIIISAVVIGILLVVVLGVVFGILLIKRROQKIR 660

DB 624 QPCFINCTHSCVDLDDKGCFAEQASPLTSIIISAVVIGILLVVVLGVVFGILLIKRROQKIR 693
QY 661 KYTMRLLQETELVEPLTPSGAMPNQAMRIILKETELRKVKVLGSGAGFTVYKGIWIPDG 720
DB 684 KYTMRLLQETELVEPLTPSGAMPNQAMRIILKETELRKVKVLGSGAGFTVYKGIWIPDG 743
QY 721 ENVKIPVAIKVIRENTSPKANKEIIDEAYVMAGVSPYVSRLLIGLICITSTVQLTQIMPY 780
DB 744 ENVKIPVAIKVIRENTSPKANKEIIDEAYVMAGVSPYVSRLLIGLICITSTVQLTQIMPY 803
QY 781 GCLLDHVRNRRGLSQDILLNCWMOIAGKMSYLEDVRLVHRDLAARNVLKSPNHHKIID 840
DB 804 GCLLDHVRNRRGLSQDILLNCWMOIAGKMSYLEDVRLVHRDLAARNVLKSPNHHKIID 863
QY 841 FGLARLLDIDETEHADGGKVPKWMALSIILRRRPTHQSDVMSYGVTVWELMTFGAKPY 900
DB 864 FGLARLLDIDETEHADGGKVPKWMALSIILRRRPTHQSDVMSYGVTVWELMTFGAKPY 923
QY 901 DGIPAREIDALEKGERLPQDPICITIDVYIMVWKWIMIDSECRPRELVSFERNARDP 960
DB 924 DGIPAREIDALEKGERLPQDPICITIDVYIMVWKWIMIDSECRPRELVSFERNARDP 983
QY 961 QRFVWIONEDLGPASPLDSTFYRSILLEDDMDGLVDAEYLVPOQGFPCDDPAPGAGMV 1020
DB 984 QRFVWIONEDLGPASPLDSTFYRSILLEDDMDGLVDAEYLVPOQGFPCDDPAPGAGMV 1043
QY 1021 HHRHSSSTRSGGDLTLGLEPSESEAPRSLAPSEGAGSDVFDGLGMAAKGLQSLPT 1080
DB 1044 HHRHSSSTRSGGDLTLGLEPSESEAPRSLAPSEGAGSDVFDGLGMAAKGLQSLPT 1103
QY 1081 HDPSPLOQRYSEPTVPLPSETDGYVAPLTCSPQEVYVQNPQVPPSPREGPLPAARPA 1140
DB 1104 HDPSPLOQRYSEPTVPLPSETDGYVAPLTCSPQEVYVQNPQVPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTSLPGKGVKDVFAFGAVENPEYLTPOGGAAPQHPPPAFSFAFDNLYYW 1200
DB 1164 GATLERAKTSLPGKGVKDVFAFGAVENPEYLTPOGGAAPQHPPPAFSFAFDNLYYW 1223
QY 1201 QDQPPERGAPPSTFKGTPTAENPEYLGLDVVP 1232
DB 1224 QDQPPERGAPPSTFKGTPTAENPEYLGLDVVP 1255
RESULT 2
148161
p-185 precursor - golden hamster
C; Species: Mesocricetus auratus (golden hamster)
C; Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C; Accession: I48161
R; Nakamura, T.; Ushijima, T.; Ishizaka, Y.; Negao, M.; Arai, M.; Yamazaki, Y.; Ishikawa
Gene 140, 251-255, 1994
A; Title: Cloning and activation of the Syrian hamster neu proto-oncogene.
A; Reference number: I48161; MUID:94193007; PMID:7908275
A; Accession: I48161
A; Status: preliminary; translated from GB/EMBL/DBJ
A; Molecule type: mRNA
A; Residues: 1-1254 <RES>
A; Cross-references: UNIPROT:O60553; GB:D16295; NID:g493236; PIDN:BAA03801.1; PID:g747592
C; Genetics:
A; Gene: neu
C; Superfamily: epidermal growth factor receptor; protein kinase homology
C; Keywords: ATP
F; 718-983/Domain: protein kinase homology <KIN>
F; 726-734/Region: protein kinase ATP-binding motif
Query Match 88.1%; Score 5894.5; DB 2; Length 1254;
Best Local Similarity 87.7%; Pred. No. 1.5e-237;
Matches 1081; Conservative 57; Mismatches 93; Indels 1; Gaps 1;
QY 1 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYPNTASLSFLQDIOBVOGY 60
DB 24 QVCTGTDMLRLPASPTHLDMLRLHYQGQVQVQGNLELTYPNTASLSFLQDIOBVOGY 83

A;Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DNA
 R;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.P.; Walton, G.M.; Der, C.J.
 Cell 59, 33-43, 1989
 A;Title: Functional independence of the epidermal growth factor receptor from a domain x
 A;Reference number: A33331; MUID:90003233; PMID:2790960
 A;Contents: annotation; internalization signal
 C;Comment: Binding of EGF to the receptor leads to internalization of the EGF-receptor
 C;Genetics:
 A;Gene: GDB:EGFR
 A;Cross-references: GDB:120610; OMIM:131550
 A;Map Position: 7p12.3-7p12.1
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;25-1210/Product: EGF receptor #status predicted <MAT>
 F;25-645/Domain: extracellular #status predicted <EXT>
 F;75-300/Domain: EGF receptor extracellular domain repeat <EB1>
 F;390-600/Domain: EGF receptor extracellular domain repeat <EB2>
 F;646-668/Domain: transmembrane #status predicted <TM>
 F;669-1210/Domain: intracellular #status predicted <INT>
 F;710-975/Domain: protein kinase homology <KIN>
 F;718-726/Region: protein kinase ATP-binding motif
 F;999-1046/Region: coated-pit mediated internalization signal
 F;1047-1210/Region: inhibitory
 F;128,175,352,413,444,528,603/Binding site: carboxyrate (Asn) (covalent) #status predic
 F;745/Active site: Lys #status experimental

Query Match 47.28; Score 3157; DB 1; Length 1210;
 Best Local Similarity 49.94; Pred. No. 5.66-124;
 Matches 624; Conservative 178; Mismatches 144; Indels 104; Gaps 20;
 QY 1 QVCTGTDMKRLPASPETHLMDLRHLYQGVQVQGNLELTVLPNNSLFLQDIQVOGY 60
 DB 29 KVCQSTNSKLTOLGTFEDHFLSLQRMFNCVLEVLNLEITYVQRYDLSFLKTIQVAGY 88
 QY 61 VLIANNVROVPLORLIRVGTOLFEDYALAVLDNGDPLNNTPTVVGSPGGLRELQLR 120
 DB 89 VLIANTVVERIPLENLQIRGNMYENYALAVLSNYD-----ANKTGLKELPMR 138
 QY 121 SLTEILKGGVLIQNPOLCYQDTILWKDIIFHKNQLALTLDITNRSACHPCSPMKGSR 180
 DB 139 NLOEILHGAVRFSNNPALCNVESIQWRDIVSSDFLSNMSDFQNHLSGCKQKPCPNGS 198
 QY 181 CWGESSDCQSLRTVTCAGGCA-RCKGLPTDCHECAAGCTGPKHSDCLACLFHNSG 239
 DB 199 CWGAGEENCQKLTIIICAQCSGCRCKSPSDCHQCAAGCTGPRSDCLVCKKFRDEA 258
 QY 240 ICELHCALVYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTVDGSCTLVCLPHNQEV 299
 DB 259 TCKDTCPLMLNPTTYQMDVNPBGKYSFGATCVKCPRYVWTDHSGCVRACGADSYEM 318
 QY 300 TAEDGTORCEKCKPCARVCYGLGMHLREVRVATSNIOEFAGCKKIFGSLAFLEPSFD 359
 DB 319 -BEDGVKCKKCEGFCRKNVNGIGIFGKDSLSINATNIRHFNKCTSIISGLHLPLVAFR 377
 QY 360 GDPASNTAPLOPELOLVFETLEITGYLYISAWPDSLPLDSVFONLOVIRGILHNGAYS 419
 DB 378 GDSFTHTPLDPQLDILKTVKEITGELLQAMPENRTDLHAFENLIIIGRTKQHQFS 437
 QY 420 LTQGLGISWGLRSLRSLGSLAIHNNTHLCFVHTVPDQLFRPNPHQALLHTANRPED 479
 DB 438 LAVVSLNITSLSLRSLKEISDGVIIISGNKNLCVANTINNKCLFGTSGQKTKIISNRGEN 497
 QY 480 ECVGEGIALCHOLCARGHCWGPPTQVCNCSQFLRGQECVCECVLQGLPREYNARCLP 539
 DB 498 SKRATGQVCHALCSPEGCPEPRDRCVSRNVRGECVCKLLEGEPRFEVENSECIQ 557
 QY 540 CHPECQFQNGSVTCFGEADQCAVHKDPPFCFVARCPCSKFDLSYMPITWFPDDEGA 599
 DB 558 CHPECLFQANNITCTGPGNVCIOCAHYIDGPHCVKTCFAGWGENNTL-VWKYADAGHV 616
 QY 600 CQCPINCTHSCVDLDDKGPFAEQRASPLTSIVSAVVG---ILLVAVVLGVVFGILIKRRQ 656

DB 617 CHLCHPNCTGCTGPGLEGCTNGPKIP--SIATGMVGALLLLLVVALGIG---LFRMR 671
 QY 657 QKIRKYTMRELLQETELVEPLTSGAMPNQAQRILKETELRKVKVLGSGAFGVYKGIW 716
 DB 672 HIVKRTLRLLQERELVEPLTSGAPNQAQLILKETBPKIKVIGSGAFGVYKGLW 731
 QY 717 IPDGENKIPVAIKVLIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQ 776
 DB 732 IPSEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCRLLGICLTSTVQLITQ 791
 QY 777 LMPYGCLLDHVRNRRGLSGODLLNMQIAKMSYLEDLVLRVHRDLAARNVLKSNHV 836
 DB 792 LMPFGCLLDYVRHKONISQYLLNMCVQIAKGNYLEDLRRLVHRDLAARNVLKTPQH 851
 QY 837 KITDFGLARLLDDETEYHADGKVPKIMWALSIILRRRTHQSDVMSYGVYVWELMTFG 896
 DB 852 KITDFGLAKULGAEEKYHAEGGKVPKIMWALSIILHRYTHQSDVMSYGVYVWELMTFG 911
 QY 897 KYDYGIPAREIPDLLEKGERLPQPICTIDVTVMVWKWIMIDSECRPRFRELVSFRM 956
 DB 912 SKPYDGIPIASEISSILEKGERLPQPICTIDVTVMVWKWIMIDADSRPKFRELIIERSKM 971
 QY 957 ARDPQRFVITQ-NEDIGPASPLDSTVRSILLEDDMGDLVDABEYLVPQGGFPCDPAPG 1015
 DB 972 ARDPQRYLVTQGDREMHLPSTDSNFYRLMDEEDMDVDVDADEYLTPQQGFF----- 1024
 QY 1016 AGGMVHRHRSSTRSGGDLTLGLPSEEEPRSLAPSEGAGSDVFDGLGMAAKGL 1075
 DB 1025 -----SSPSTRTPLLSLSLTSN--NSTVACIDRNGL 1055
 QY 1076 QSLPTHDPSPLOYSBDPTVPLPSET--DGYVAPLTCSPQPYVNVQDVFPQPSPREGP 1133
 DB 1056 QSCPKEKDSFLQYSSDPTGALTEDSDIDTFL-----PVPEYINQ-SVPRKPSAGVQNP 1108
 QY 1134 LPAARPAATLERAKTLPQKNGVWVDVFAFGGAVENPEYL-TPQGGAAQPPHPPAFSP 1192
 DB 1109 VYHNQPLNP-----APSRDPHYQD--PHSTAVGNPEYLVNTVQ-----PTCVNS 1149
 QY 1193 AFONLYYWDQ-----DP-----PERGAPPSTFKGTPTAENPEYL 1226
 DB 1150 TFDSPAHWAQKSHQISLNDPDYQQDFPFKEAKPNIGIFKGS-TAENAEYL 1198

RESULT 5

A53183

epidermal growth factor receptor precursor - mouse

C;Species: Mus musculus (house mouse)

C;Date: 06-Jan-1995 #sequence revision 06-Jan-1995 #text change 09-Jul-2004

C;Accession: A53183; A43818; S24942; A28941; S45325; I49643

R;Luetkeke, N.C.; Phillips, H.K.; Qiu, T.H.; Copeland, N.G.; Earp, H.S.; Jenkins, N.A.;

Genes Dev. 8, 399-413, 1994

A;Title: The mouse waved-2 phenotype results from a point mutation in the EGF receptor

A;Reference number: A53183; MUID:94170986; PMID:8125255

A;Accession: A53183

A;Molecule type: mRNA

A;Residues: 1-1210 <LUE>

A;Cross-references: UNIPROT:Q01279; GB:U03425

R;Avivi, A.; Lax, I.; Ullrich, A.; Schlessinger, J.; Givol, D.; Morse, B.

Oncogene 6, 673-676, 1991

A;Title: Comparison of EGF receptor sequences as a guide to study the ligand binding si

A;Reference number: A43818; MUID:91232866; PMID:2030916

A;Accession: A43818

A;Molecule type: mRNA

A;Residues: 1-714 <AVI>

A;Cross-references: GB:X59698

R;Eisinger, D.P.; Serrero, G.

submitted to the EMBL Data Library, June 1992

A;Reference number: S24942

A;Accession: S24942

A;Molecule type: mRNA

A;Residues: 969-971, 'K', 973-1115, 'D' <EIS>

A;Cross-references: EMBL:Z12608

R;Heisermann, G.J.; Gill, G.N.

J. Biol. Chem. 263, 13152-13158, 1988
 A;Title: Epidermal growth factor receptor threonine and serine residues phosphorylated
 A;Reference number: A28941; MUID:88330814; PMID:3138233
 A;Accession: A28941
 A;Molecule type: protein
 A;Residues: 689-694, 'X', 696-704, 'L', 706-707, 989-992, 'XX', 995-996, 'X', 998-1000, 1002-1009, R;Hibbs, M.L.; Dunn, A.R.; Alexander, W.S.
 submitted to the EMBL Data Library, April 1994
 A;Description: The complete cDNA sequence of the Mouse Epidermal Growth Factor Receptor
 A;Reference number: S45325
 A;Accession: S45325
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-971, 'K', 973-1210 <VER>
 A;Cross-references: EMBL:X78987; NID:G488830; PIDN:CAA55587.1; PID:G488831
 R;Paria, B.C.; Das, S.K.; Andrews, G.K.; Dev, S.K.
 Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993
 A;Title: Expression of the epidermal growth factor receptor gene is regulated in mouse B
 A;Reference number: I49643; MUID:93126380; PMID:7678348
 A;Accession: I49643
 A;Status: translated from GB/EMBL/DBJ
 A;Molecule type: mRNA
 A;Residues: 12-20, 22-132 <RES>
 A;Cross-references: GB:L06864; NID:G193001; PIDN:AAA53029.1; PID:G567201
 C;Genetics:
 A;Gene: EGFR
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; growth factor receptor; kinase-related transforming protein; phosphoprotein
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;648-670/Domain: transmembrane #status predicted <TM>
 F;712-977/Domain: protein kinase homology <KIN>
 F;720-728/Region: protein kinase ATP-binding motif
 F;680,695/Binding site: phosphate (Thr) (covalent) #status experimental
 F;697,1070,1071/Binding site: phosphate (Ser) (covalent) #status experimental
 F;933/Binding site: (or 997) phosphate (Ser) (covalent) #status experimental
 F;1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimental
 F;1197/Binding site: phosphate (Tyr) (covalent) #status experimental

Query Match 46.8%; Score 3134; DB 2; Length 1210;
 Best Local Similarity 49.9%; Pred. No. 5e-123;
 Matches 627; Conservative 170; Mismatches 352; Indels 108; Gaps 22;

QY 1 QVCTGTDMLRLPASPTHLMDLRLHLYGQGVQVQGNLELYLPNTASLSFLQDIQVQVQY 60
 DB 29 KVCQGTSENRLTQGTDFHFLSLQRYNNCEVVLGNLEITYVQRYNDLSFLTKYIQVAGY 88
 QY 61 VLIAHNQRVQLRLRIVRGTLQFDNLYALAVLDNGDPLNNTPTVTGASPGGLRELQRL 120
 DB 89 VLIANTVTRIPLENLQIRGNALYENTYALAILSN-----YGTNRTGLRELPMR 138
 QY 121 SLTEILKGVGLIQNPOLCYQDTILWKDI-----FHKNQLALTLIDNRSRACHPCSPMC 176
 DB 139 NLOELILGAVRFSNNPILCNMTDITQWRDVIQNVFMSNMDL-----QSHFSSCPKCDPSC 194
 QY 177 KGSWCWGESSEDCOSLRTRTCAGCA-RCKGPLPTDCCHQCAAGCTGPKHSDCLACLHF 235
 DB 195 PNGSCWGGGNCCKLFIKCAQCQSHRCGRSPSDCHNQCAAGCTGPRESCLVCQKF 254
 QY 236 NMSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPNYLYSTDVGSCTLVCPPLH 295
 DB 255 QDEATCKDTCPLMLNPTTYQMDNPEGKYSGFATCVKCKPRVYVTDHSGCVACRACGPD 314
 QY 296 NQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRATVSANTQEFAGCKKIFGSLAFLP 355
 DB 315 YYEV-EDGTIRKCKKCDGPRCKVNCNGIGEGFEDKTLINATNINFKYCYTAISGDLHLP 373
 QY 356 ESFGDQDASNTAPLQPELOQVFTLEBITGLYLSIAMPDLSPLDLSVFQNLQVIRGLIH 415
 DB 374 VAFKGDSTFTRPPLDPRLEILKTVKEITGLTGLLQAMPDNWTDLHAFENLEIRGRKQH 433
 QY 416 GAYSILTLQGLISWGLRSLRELQSGALIHNTHLFCFVHTVPDQLFRPHQALLHTAN 475
 DB 434 QQFSLAVVGLNITSLGLRSLKEISDGVIIISGNRLCYANTINWKKLFGTNPQKTKIMN 493

QY 476 RPEDECVGEGLACHQICARGHCWCPGPTQCVNCSQFLRGQCECRVLQGLPREVYNAR 535
 DB 494 RAEKDCKAVNHVNCPLCSCSGCWGPBRDCVSCQVSGRECVKCMILGEPRREFVENS 553
 QY 536 HCLPCHPECOQNGSVTCFQPEADQCACAHYKDPFCFVARCPGSGVKPDLISYMPIMKPPD 595
 DB 554 ECIQCHPECLPQAMNITCTGRGPDNCIQAHYIDGPHCVKTCPAGINGENNTL-VKMYAD 612
 QY 596 EEGACQCPINCTHSCVDLDDKQGPABORASPLTSIVSAVVGILLVVLGVVFGI-LIKR 654
 DB 613 ANNVCHLCHANCTYGCAGPGLQGCCEVWPSGPKPSIATIGVGGLLFIWV-VALGIGLFMR 671
 QY 655 RQOKIRKVTMRILQFTELVEPLTPSGAMPNQAOWRIILKETELAKVKVLGSGAGTGVYKG 714
 DB 672 RRHVRKTRRLRLOERELVEPLTPSGAPNQAHLRIILKETEFKKIKVLGSGAGTGVYKG 731
 QY 715 IWIPIGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLV 774
 DB 732 LWIPEGEKVKIPVAIKELREATSPKANKEILDEAYVMASVDNPHVCRLLGICLTSTVQLI 791
 QY 775 TQMPYGCLLDHHVRENRLGSDLLNWCMIAGKMSYLEDLVLRVHRDLAARNVLKSPN 834
 DB 792 TQMPYGCLLDYVREHKDNIQSOLLANWCQIAKGMNYLEDRRLVHRDLAARNVLKTPQ 851
 QY 835 HVKITDFGLARLLDIDETEHADGKVPKIKWMALESILRRRFTHQSDVMSYGVTVWELMT 894
 DB 852 HVKITDFGLAKLGAEEKEYHAEKGVPIKMALESILHRIYHQSDVMSYGVTVWELMT 911
 QY 895 FGAEPYDGIPIAREIPDLLEKGERLPQPPICITDVMIMVKCMIDSECRPRELVSFBS 954
 DB 912 FGSFPYDGI PASDISSILEKGERLPQPPICITDVMIMVKCMIDADSRKPRELILERS 971
 QY 955 RWARDPQRFVIO-NEDLGPASPLDSTYRSILLEDDMGDLVDAEYLVAPOGFCPDPA 1013
 DB 972 QWARDPQRYLVIQDGRMHLPSPDTSNFYRALMDEEDMEDVDADEYLIPQGGFF---- 1026
 QY 1014 PGAGGWVHRHRSSTRSGGGDLTLGLEPSEEAAPRSPAPSEAGSDVDFDGLGMGA 1073
 DB 1027 -----NSPST-----SRTFLSSLSATS-NSTVACIN 1053
 QY 1074 GLQSLPTHDPSLPORYSDPTVPLPSET--DGYVAPLTCSPQPEYVQPDVPRQPPSPRE 1131
 DB 1054 RNSGCRKVEDAPLQRYSSDPTGAVTEDNIDDAFL-----PVPEYVQ-SVPKRPAGSVQ 1106
 QY 1132 GPLPAARPAAGATLERAKTILSPCKGVVVDVFAFGGAVENPEYL-TPQGAAPQPHPPAF 1190
 DB 1107 NPVYHNQPLHP-----APGRDLHYQN--PHSNAVGNPEYLNTAQ-----PTCL 1147
 QY 1191 SPAPDNLYWQO-----DP-----PERGAPPSTFKGTPTAENPEYGLDVP 1231
 DB 1148 SSGFNSPALMIQKSHQMSLDNPDYQDFFPKETKPNIGFKG-PTAENAEYLVRVAPP 1203

RESULT 6

TVCHLV

epidermal growth factor receptor precursor - chicken
 N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB

C;Date: 28-Feb-1986 #sequence revision 05-May-1995 #text_change 09-Jul-2004
 C;Accession: A27720; A00643

R;Lax, I.; Johnson, A.; Howk, R.; Sap, J.; Bellot, F.; Winkler, M.; Ullrich, A.; Vennstr

Mol. Cell. Biol. 8, 1970-1978, 1988

A;Title: Chicken epidermal growth factor (EGF) receptor: cDNA cloning, expression in mo

A;Reference number: A27720; MUID:88261272; PMID:3260329

A;Accession: A27720

A;Molecule type: mRNA

A;Residues: 1-1223 <LAX>

A;Cross-references: UNIPROT:P00534; GB:M20386

R;Nilgen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Crittenden, L.B.; Raines, I.

Cell 41, 719-726, 1985

A;Title: c-erbB activation in ALV-induced erythroblastosis: novel RNA processing and pr

A;Reference number: A00643; MUID:85228222; PMID:2988784

A:Accession: A00643
A:Molecule type: mRNA
A:Residues: 585-1223 <NIL>
A:Cross-references: GB:M10066
C:Genetics:
A:Gene: erbB
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: alternative splicing; ATP; autophosphorylation; glycoprotein; growth factor specific protein kinase
F:1-30/Domain: signal sequence #status predicted <SIG>
F:31-1223/Product: epidermal growth factor receptor #status predicted <MAT>
F:31-654/Domain: extracellular #status predicted <EXT>
F:81-307/Domain: EGF receptor extracellular domain repeat <EB1>
F:397-610/Domain: EGF receptor extracellular domain repeat <BE2>
F:655-677/Domain: transmembrane #status predicted <TMN>
F:678-1223/Domain: intracellular #status predicted <INT>
F:719-984/Domain: protein kinase homology <KIN>
F:727-735/Region: protein kinase ATP-binding motif
F:136,202,280,361,370,422,575,580,615,633/Binding site: carbohydrate (Thr) (covalent) #status predicted
F:192,650/Binding site: carbohydurate (Ser) (covalent) #status predicted
F:687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F:754/Active site: Lys #status predicted
F:1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #status

Query Match 46.6%; Score 3118.5; DB 1; Length 1223;
Best Local Similarity 49.1%; Pred. No. 2.2e-122;
Matches 626; Conservative 174; Mismatches 336; Indels 139; Gaps 24;

Qy 1 QVCTGTDMLRLPASPTHLDMLRHLYQGCVQGNLELTVLPFNASLSFLQDIOEVQY 60
Db :
Qy 35 KVCQGTNNKLQTGHVEDHFTSLQRMYNNECVLSNLSEITYVEHNRLDTFLKTIQEVAGY 94
Db :
Qy 61 VLIAHNOVRQVLQRILRIVRGTOLFEDONYALAVLDNGDPLNNTTPVTGSPGLREQLR 120
Db :
Qy 95 VLIALNVVDVIPLENLIQIRGNVLNDNSPALVLSNYH-NMKTKQ-----GURELPMK 145
Db :
Qy 121 SLTEILKGVLIORNPOLCYODTLWKDIIFHKNNQLALTLLID-TNRSRACHPCSPMCKGS 179
Db :
Qy 146 RLSEILLGGVKISNPKLCNNMTVLWMDIITDSRK-PLTVLDFASNLSLSCPCHKPNCTED 204
Db :
Qy 180 RCWGSESSEDOSLTRTVCAGGCA-RCKGPLPTCCHEQCACAGCTGPKHSCLACLPHNS 238
Db :
Qy 205 HCWAGEQNQOTLTUKVICAQCSGRCKGVKPSDCCHNQCAAGCTGPRESCLACKRFDD 264
Db :
Qy 239 GICELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPVNYSLTDVGSCCTLVCPHLHQE 298
Db :
Qy 265 ATCKDTCPPLVINYPTYQMDVPNEGKYSGATCRECPHYVVDHGSCVRSQNTDYE 324
Db :
Qy 299 VTAEDGTQRCSEKSKPCARVCYGLGMHLEHVRAVTSANTOEFAGCKKIFGSLAFPLESF 358
Db :
Qy 325 V-BENGVRKCKCDGLSKVCNGIGIGELKGILLSINATIDSFNCKTKINGDVSIIPVAF 383
Db :
Qy 359 DGPASNTAPLOEQLOVFTLEBITGYLIISAWPDSLPLSVFONLOVTRGILLNGAY 418
Db :
Qy 384 LGDAFTKTLPDKDLDPFTVKEISGFLAIQAMPDNATLDLYAFENLEIIRGTQKHGOY 443
Db :
Qy 419 SLTLQGLIGISWLGLRSURELGSLGLATHNHNTLCFVHTVPWDOLFRRNPQHALLHTANRPE 478
Db :
Qy 444 SLAVNVNKIOSLGLRSLSKEISDGDIATWKNKNLICYADTMWRSLPFATQSOKTKIIQNRNK 503
Db :
Qy 479 DECVGEGLAHQLCARGHCWPGPTQCVNCSSQFLRGQECVEEBCRVLQGLPREYVNAHCL 538
Db :
Qy 504 NDCTADRHRVCDPLCSDVCGWGPFPFHCFSCRFSRQKECVKQCNILQGEPRERFERSKCL 563
Db :
Qy 539 PCHPECOPONG---SVTCFGPEADOCVACAHHYKDPFCPCVARCPSGVKPDLSYMPIWKFPD 595
Db :
Qy 564 PCHSECVLQNSTAYNTTCSGPGPDHCKMAHFIDGPHCVKCAPAGVLGENDTLL-VWKYAD 622
Db :
Qy 596 EEGACGPCPINCTSHSCVDLDDKGCPAQRASPILTSIVSAVV-GILLAVALGVVFGILIKR 654
Db :
Qy 623 ANAVCQLCHPNCTRCKGPGLEGCP----NGSKTFSTIAAGVVGGLLCLLVVGLGIYLRR 679
Db :
Qy 655 ROQIRKYTWRRLLQETELVEPLTPSGAMPNQAMRILKETLRKKVVLGSGAFGTYYKG 714
Db :

Db 264 TCKDTCPPPKLYDISHQVNDPNIKYTFGAACVKECPNSVNVTE-GACVRSKCSAGMLEV 322
Qy 300 TAEDGTORCEKSKPCFARVYCYGLGMEHLREVRVTSANIOBFAGCKIFGSLAFLPESFD 359
Db 323 D-ENGKRSKPCDGVCPKVDGIGISLNTIANSNIRSFNCTKINGDIILNRISFE 381
Qy 360 GDPASNTAPLOEOLQVPETLEETITGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYS 419
Db 382 GDPHYKIGTMDPEHLMLNLTKVEITGYLVIMWPNENMTSLSVFQNLLEIRGRTTFSRGFS 441
Qy 420 -LTIQGLGISWGLRSRELGLALIHNNTHLCFVHTVPHDOLFRPHQALLHTANRPE 478
Db 442 FVVQVVRHLQWGLRSLEKESAGNVILKNTLQRLYANTINRRRFRSDOSIEYDART-- 499
Qy 479 DECVGEGLACHOLCARGHCWPGPTQCVNCSQFLRGQECVECEVLCQLPREYVNAHCL 538
Db 500 -----ENQTCNNECEDGCM-PGPTMCVSLHLVDRGRCVASCNLLQGEPREAQVDCRCV 553
Qy 539 PCHPECPONGSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSYMPFIWKPDEEG 598
Db 554 QCHOECLVQTDLSLTCYGPANCSKSAHFQDGPQCIPRCPHGILGDDGTL-INKYADKWG 612
Qy 599 ACQPCPNTCHSDVDLDDKGPCAQRASPLTSIYSAVVGILLVVVLGVVFGILIKRQOK 658
Db 613 QCQPCHQNCTQCCSGPGLSGCRGD-IVSHSLAVGLVSLGLITIVIVALLIVLLRRRIK 671
Qy 659 IRKVTMRLLQETELVPLTPSGAMPNOAORILKETELRKVKVGLSGAGFVYKGIWIP 718
Db 672 -RKETIRCLLOEKELVEPLTSGQAPNAQAFRIILKETEFKDRVLGSGAGFVYKGLWNP 730
Qy 719 DGENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVTOLM 778
Db 731 DGENIRIPVAIKVIREATSPKVNQEVLDVAYVMSVDHPHVCRLGLICLTSAVQLVTOLM 790
Qy 779 PYGCLLDHVRNCRGLSODLLNKMCIKMSVLEEDVRLVHRDLAARNVLKSPNHVKI 838
Db 791 PYGCLLDVVRQBRICQWLLNMCVQIAGMNYLEERHLVHRDLAARNVLLKPNHVKI 850
Qy 839 TDFGLARLLDIDETEHADGKVPKWMALESIILRRFTHQSVDVMSYGVTVWELMTFGAK 898
Db 851 TDFGLSKLLTADEKEYQADGKVPKWMALESILOWYTHQSDVMSYGVTVWELMTFGSK 910
Qy 899 PYDGIPAREIPDLLEKGERLPQPICTIDVTVMVKCMIDSECRPFRELVSFBSMAR 958
Db 911 PYDGIPAKEIASVLENGERLPQPICTIEVTMILKCMIDPSRPFRELVGFSQWAR 970
Qy 959 DPQRFVIONEDLGASPLDSTFRSILLEDMDGLVDAEYLYVPOQGFPCDPAPCAGG 1018
Db 971 DPSRYLVIQG---NLPSLSDRRLFSRLSSDD--DVVDADBYLLPYKRI----- 1014
Qy 1019 MVHHRSSSTRSGGDLTLGLEPSEBEAPRSLAPSEGAGSDVDFDGLGMAAKGLQLS 1078
Db 1015 -----NRQGS-----EPICPTGH----- 1028
Qy 1079 PTHDPSPLQRYSEDPV-PLPSETDGYVAPLTCSPQPEYVNPQDVRPQ-----PSPR 1130
Db 1029 PVRENSITLRNISDPTNALEKDLGDH-----EYVNPQGSSTSRSLSDIYENYE 1078
Qy 1131 E-----GRLP-AARPAGATLERAKTLSPGKGVKVDVAFGGAIVENPEYLTPOGGAAPQ 1184
Db 1079 DLTDGWPVSLSSQAEATNFSRPLYLNTNQSL----PLVSSGSMDDPDY---QAG----- 1127
Qy 1185 HPPAFSPAFDNLVYMDQDPERGAPPTFKGTPTAENPEYLG 1227
Db 1128 -----YQNAF-----LPQTALTGNGMFLPAENLEYLG 1156

RESULT 9

A36223

kinase-related transforming protein (erbB3) (EC 2.7.1.1-) precursor - human

C;Species: Homo sapiens (man)

C;Date: 04-Oct-1991 #sequence_revision 13-Jan-1993 #text_change 09-Jul-2004

C;Accession: A36223; I59164

R;Kraus, M.H.; Issing, W.; Miki, T.; Popescu, N.C.; Aaronson, S.A.
Proc. Natl. Acad. Sci. U.S.A. 86, 9193-9197, 1989
A;Title: Isolation and characterization of ERBB3, a third member of the ERBB/epidermal
A;Reference number: A36223; MUID:90083234; PMID:2687875
A;Accession: A36223
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-1342 <KRA>
A;Cross-references: UNIPROT:P21860; GB:M29366
R;Plozman, G.D.; Whitney, G.S.; Neubauer, M.G.; Green, J.M.; McDonald, V.L.; Todaro, G.
Proc. Natl. Acad. Sci. U.S.A. 87, 4905-4909, 1990
A;Title: Molecular cloning and expression of another epidermal growth factor receptor-r
A;Reference number: I59164; MUID:90311312; PMID:2164210
A;Accession: I59164
A;Status: preliminary; translated from GB/EMBL/DBJ
A;Molecule type: mRNA
A;Residues: 1-559, 'G', 561-957, 'F', 959-1063, 'G', 1065-1342 <RES>
A;Cross-references: GB:M34309; NID:G183990; PID:AAA35979.1; PID:G306841
C;Genetics:
A;Gene: GDB:ERBB3; HER3
A;Cross-references: GDB:119880; OMIM:190151
A;Map position: 12q13-12q13
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homol
C;Keywords: ATP; phosphotransferase
F;707-972/Domain: protein kinase homology <KIN>
F;715-723/Region: protein kinase ATP-binding motif

Query Match 36.3%; Score 2427.5; DB 2; Length 1342;
Best Local Similarity 40.8%; Pred. No. 1.2e-93;
Matches 528; Conservative 190; Mismatches 449; Indels 127; Gaps 31;
Qy 2 VCTGDMKRLPASPETHLDMLRHLYQCGVQVQGNLELTYPNTNASLSFLQIDIEVQGV 61
Db 28 VCFGLNGLSVTGDAENQYQTLKLYERCEVWGNLEIVLTGHVADLSFLQWIREVTGV 87
Qy 62 LIAHNVQVQPLQRLRIVRGTLQFEDNYALVLDNGPLANNTPVTGASPGGLRELOURS 121
Db 88 LVANNEFSTLPLNLRVVRGTQVYDVGKFAIFVM-----LNVNT-----NSSHALRQLRLTQ 138
Qy 122 LTELKGGVLIQNPOLCYODTILWKDI FHKNQALALTLDITNRSRACHSPCKSGSRC 181
Db 139 LTELKGGVVIKRNKDLCHMDTIDMRDIVDRD-----AAIVVKONGRSCPPCHCKG-RC 194
Qy 182 WGESSEDCQLRTVCAGG-ARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 195 WGFSEDCQLTKTICAPQCNHCFGNPNQCCHDECAGCGSPQDTCFACRHFNDGSA 254
Qy 241 CELHCPALVTYNTDTTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCITLVCPHNEVT 300
Db 255 CVPRCPQPLVYNKLTFOLEPNPHTKYQYGVGVASCPHNEV-VDQTSVCRACPDPKMEVD 313
Qy 301 AEDGTORCEKSKPCARVCYGLGMEHLREVRVTSANIOBFAGCKIFGSLAFLPESFDG 360
Db 314 -KNGLKMCPCGGLCPKACEGTGSG--SRFTVDSSNIDGVNCTKILGNLDFLITGLNG 370
Qy 361 DPASNTAPLOEOLQVPETLEETITGYLYISAWPDSLPDLVSFQNLQVIRGRILHNGAYS- 419
Db 371 DPHHKIPALDPEKLVNFRVREITGYLNIQSWPHMNFVSFNLTTIGRSLYNRGFSL 430
Qy 420 LTIQGLGISWGLRSRELGLALIHNNTHLCFVHTVPHDOLFRPHQALLHTA-NRPE 478
Db 431 LIMKLNVTSLGFRSLKEISAGRIYISANRQLCVHSLNWTKVLGRGPTTEERLDIKHNR 490
Qy 479 DECVGEGLACHOLCARGHCWPGPTQCVNCSQFLRGQECVECEVLCQLPREYVNAHCL 538
Db 491 RDCVAGKVCDFPLCSGGCGWPGPGQCLSCRNYSRGVCTVTHCNFLNGEPREFAHEACF 550
Qy 539 PCHPECPONGSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSYMPFIWKPDEEG 598
Db 551 SCHPECPOMEGTATNGSGSDTCAQCAHFRDGHCVSCCHGVLG--AKGPIYKYPVQN 608
Qy 599 ACQPCPNTCHSDVDLDDKGPCAQR-----SPLTSTIVSAVVGILLVVVLGVWFGIILIKR 654

Db 609 ECRPCHENCTQCCKGPELQDCLGTLVLIGKTHLTWALTVIAG--LWVFMILGGTFLYW 666
Qy 655 RQOKIR-KYTWRLLOETELVEPLTPSGAMPNQAQMRILKTELKRVKVLGSGAGFTYVK 713
Db 667 RGRRIQNKRAMRYLGERGESIEPLDPS-ERANKVLARIFKTELRLKVLGSGVFGTVHK 725
Qy 714 GIWIPGDNVNIKVAIKVLRENTSPRANKILDEAYVMAGVSPYVSRILGICLTSTVOL 773
Db 726 GWIPEGESIKIPVCIKVIEDKSGRSQFQAVTDHMLAIGSLDHAHIVRLGLGFCPSLQL 785
Qy 774 VTQMPYGCLLDHVRENRLGSGDILNWCQIAKMSYLEDLVRLVHRDLAARNVLKSP 833
Db 786 VTQYLPGLSLDLHVRGHALGQQLLLNMGVIAKGMYYLEERGMVHRNLAARNVLKSP 845
Qy 834 NHVKITDFGLRLDIDETEHADGKVPKIKMALESILRRRTHQSDVMSYGVTTWELM 893
Db 846 SQQVADFVADLLPDDKQLLYSEAKTPIKMALESIIHFQKTHQSDVMSYGVTTWELM 905
Qy 894 TFGAKPYDGIPIAREIPDLLEKGERLPQPICTIDVVMVWKWIDSECRPRELVSF 953
Db 906 TFGAEPYAGLRLAEVPLLEKGERLAQPOLCTIDVVMVWKWIDENIRPTEKELANEF 965
Qy 954 SRMARDPQVVTIONEDLGA-----SPLDSTFYRSLLDDMDGLVDAEYLVFQQGFPCP 1010
Db 966 TRMARDPPRYLVIKRES-GPGIAPGPEPHGLTNKLEVELEPELDDLDLEAED---- 1020
Qy 1011 DPAPGAGMVHRRSSSTRSGGDLTLGLEP-SESEAPRSLAPSEGAGSDVFDGDLGM 1069
Db 1021 -----NLATTTLSALSPLVGTLLNRPRGQSLSLSPSGY-MPMNOGNLGE 1064
Qy 1070 GAAKGLQSLPTH-D-PSPLQRYSDPTVPLP-----SETDGYVA----- 1106
Db 1065 SCQESAVSGSSERCPVSLH-----PMRPGCLASESGHVTGSEAELOEKVSMCSR 1118
Qy 1107 PLTCSQPE-----YVNPQDVVRPQPSFREGP-----LPAARPAGATLERAKTILS 1151
Db 1119 SRSRSPRPRDSAYHSQRSHLLTPVTPPLGPLEEDVNGYVMPDTHLKGTPSSREGTILS 1178
Qy 1152 P-KNGV-----KDVFAFGGAVENPEYLTPOGGAAPQHPHPAPSPADNLYYWD--- 1201
Db 1179 SVGLSSVLGTTEDEED-----EYEVNRRRRHSP-PHPRPSLEELGYEYMDVGS 1229
Qy 1202 -----QDPPERGAPPSTFKGTPTABNPEYL 1226
Db 1230 DLSASLGSQSCPLHPVIMPATAGTTPDEYEM 1263
RESULT 10
JC4387
epidermal growth factor receptor homolog precursor - rat
N;Alternate names: ErbB3 protein; HER3 protein
C;Species: Rattus norvegicus (Norway rat)
C;Date: 17-Jan-1996 #sequence_revision 19-Apr-1996 #text_change 16-Aug-2004
C;Accession: JC4387
R;Hellyer, N.J.; Kim, H.H.; Greaves, C.H.; Sierke, S.L.; Koland, J.G.
Gene 165, 279-284, 1995
A;Title: Cloning of the rat ErbB3 cDNA and characterization of the recombinant protein.
A;Reference number: JC4387; MUID:96096535; PMID:8522190
A;Accession: JC4387
A;Molecule type: mRNA
A;Residues: 1-1339 <HEL>
A;Cross-references: GB:U29339; NID:g915389; PID:g915390
A;Experimental source: liver
A;Note: The authors translated the codon AAC for residue 369 as Thr and GTT for residue 374.
C;Comment: This protein is a functional heregulin receptor that transduces signals to the cell.
C;Genetics:
A;Gene: ErbB3
C;Superfamily: protein kinase homology
C;Keywords: ATP; growth factor receptor; liver; phosphoprotein; transmembrane protein
F;1-19/Domain: signal sequence #status predicted <SIG>
F;20-1339/Product: epidermal growth factor homolog #status predicted <MAT>
F;840-659/Domain: transmembrane #status predicted <TM>
F;705-970/Domain: protein kinase homology <KIN>

F;713-721/Region: protein kinase ATP-binding motif
F;939,1051,1156,1194,1196,1219,1257,1259,1273,1286,1325/Binding site: phosphate (Tyr)

Query Match 35.0%; Score 2344; DB 2; Length 1339;
Best Local Similarity 41.0%; Pred. No. 3.4e-90;
Matches 516; Conservative 170; Mismatches 424; Indels 148; Gaps 32;

Qy 2 VCTGTDMLRLPASBETHLDMLRHLYQGVQVQGNLELTLYLPTNASLSFLDIOEQVQYV 61
Db 28 VCPGTLNGLSVTGDADNOYQTLKYKECEVMGNLEIVLTGHNADLSFLQIREYAYV 87
Qy 62 LTAHNOVROVPLQRLIRVRGTQOLFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQLS 121
Db 88 LVAMNEFVPLPLENLRVVRGTQYDQKPAIFVM-----LNYNT-----NASHALRQLKFTQ 138
Qy 122 LTELKGGVLIQRNPOLCYQDTILMKDI FHKNNQALATLIDTNRSRACHPCSPMKGSR 181
Db 139 LTELKGGVYIEKNDKLCMDTIDWRDIVRVR---GAEIVWKNNGANGCPCHEVCKG-RC 194
Qy 182 WGESSEDCOSLRTVTCAGGC-ARCKGPLPTDCCHECOAGCTGPKHSDCLACLHFNHSGI 240
Db 195 WGFDPDDCQILTKTICAPQCNCRGFCGPNPQCHDECAGCGSPQDTDCFACRRFNDGA 254
Qy 241 CELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVSGCTLVCPHMQEVT 300
Db 255 CVPRCEPELVYKLI FOLEPNHTKYQYGVGVASCAPHNV-VDQTFVCRACPPDKMEVD 313
Qy 301 AEDGTQRCBCKSKPCARVCYGLGMEHLREVRAVTSANIOEFAGCKKIFGSLAPLPSFDG 360
Db 314 -KHGLKMCFCGCLCPKACEGTSG--SRYTVDSSNIDGFVNCIKILGNLFLITGLNV 370
Qy 361 DPASNTAPLOPELOVFFLEITGVLYISAMPDSLPLDLSVFQNLQVIGRIHLNGAYS- 419
Db 371 DPWHKIPALDPEKLANFRTVREITGYLNTQSPPHMHNFVSFNLTTIGRSLYNRGFSL 430
Qy 420 LTLQGLISWGLSRSLRGLSLALITHNTHLCFVHTVPWDLFRNPQALLHTA-NRPE 478
Db 431 LIMKNLVNTSLGFRSLKEISAGRVISANQOLCYHSLNLTWLLRGPSEERLDIKYDRPL 490
Qy 479 DSCVGEGLACHOLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCL 538
Db 491 GECLAEGKVCDCPLCSGGCGWGPAGQCLSCRYSREGVCVTHCNFLQGEPRFVHEAQCF 550
Qy 539 PCHPECPQNGSVTCFGEADOCVACAHYKDPFCVARCPGSKVDPDLSYMPIWKPEDEG 598
Db 551 SCHPECLPMEGTSTYNGSGDACACAHFRDGHPCVNSCPHGLG--AKGPYKYKYPDAQN 608
Qy 599 ACQPCPINCTHSC--VDLDDKGPAPQASPLTSIVSAVVGILLVVVLGVWFGLIKRRQ 656
Db 609 ECRPCHENCTQCNGPELQDCLGAEVLSKPHLVIATVVG--LAVILMLGSGFLYWRG 666
Qy 657 QKIR-KYTWRLLOETELVEPLTPSGAMPNQAQMRILKTELKRVKVLGSGAGFTYVKGI 715
Db 667 RRIONKRAMRYLGERGESIEPLDPS-ERANKVLARIFKTELRLKVLGSGVFGTVHKGI 725
Qy 716 WLPDGENVKIPIVAKVLRENTSPKANKELIDRAYVMAGVSPYVSRILGICLTSTVOLYT 775
Db 726 WIPEGESIKIPVCIKVIEDKSGRSQFQAVTDHMLAIGSLDHAHIVRLGLGFCPSLQLVT 785
Qy 776 QLMYPGCLLDHVRENRLGSGDILNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNH 835
Db 786 QYLPGLSLDLHVKQHRETLGPOLLNMGVIAKGMYYLEESWVRDLAARNVLKSPSQ 845
Qy 836 VKITDFGLRLDIDETEHADGKVPKIKMALESILRRRTHQSDVMSYGVTTWELMTF 895
Db 846 VQVADFGVADLLPDDKQLLYSEAKTPIKMALESIIHFQKTHQSDVMSYGVTTWELMTF 905
Qy 896 GAKPYDGIPIAREIPDLLEKGERLPQPICTIDVVMVWKWIDSECRPRELVSF 955
Db 906 TFGAEPYAGLRLAEVPLLEKGERLAQPOLCTIDVVMVWKWIDENIRPTEKELANEF 965
Qy 956 WARDPQVVTIONEDLGA-----SPLDSTFYRSLLDDMDGLVDAEYLVFQQGFPCPAPG 1015

Db 966 MARDPPRYLVTKRAS-GPGTP--PAAPSVLTTKEL-----QEALEBPFL----- 1007

Qy 1016 AGGMVHRRSSRSRGGLDTLGLPSEE-----EAPRSLAPS 1055

Db 1008 -----DLDLLEAEELGATSLGALSPLTGTILTRPGSQSLSPS 1048

Qy 1056 EG-----AGSDVFDGLGMAAGLQSLPHDPLRYSDPTVPPLPSETDGVY-- 1105

Db 1049 SGYMPNQSSIGEACLDSAVLGGRQFSPRLSH-PIPRGR-----PASESEGHVGTG 1100

Qy 1106 -APL-----TC-----SQPE-----YVNPQDVVRQPPSPREGP-----LPA 1136

Db 1101 SEAELOEKVSVCRSRSRSPRGDSAYHSQRHSLTPTVPLSPGLEEDGNGYMPD 1160

Qy 1137 ARPAGATLRAKTLSP-GKNGV-----KDVFAFGGAVENPEYLTLPQGAAPPHPP 1187

Db 1161 THLRGASSRGTLSVGLSSVLGTEREDED-----EYEVYMKRKGSP-PRIP 1209

RESULT 11

TVYUHV

protein-tyrosine kinase (EC 2.7.1.112) erbB - avian leukosis virus

N;Contains: amino end of gag protein; env protein fragment; protein-tyrosine kinase

C;Species: avian leukosis virus, ALV

C;Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 09-Jul-2004

C;Accession: B00643; A00643

R;Nilssen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Crittenden, L.B.; Raines, M. Cell 41, 719-726, 1985

A;Title: c-erbB activation in ALV-induced erythroblastosis: novel RNA processing and product

A;Reference number: A00643; MUID:85228222; PMID:2988784

A;Accession: B00643

A;Molecule type: mRNA

A;Residues: 1-698 <NIL>

A;Cross-references: UNIPROT:P00534; GB:M10066; GB:M13881; NID:g211749; PIDN:AAA48763.1;

A;Note: in Genbank entry CHKERBBF, release 109.0, the source is designated as Gallus gallus

C;Comment: This protein is synthesized as a gag-env-erbB protein.

C;Genetics:

A;Gene: gag-env-erbB

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific P

F;1-6/Product: gag protein (fragment) #status predicted <GAG>

F;7-59/Product: env protein (fragment) #status predicted <ENV>

F;60-698/Product: protein-tyrosine kinase erbB #status predicted <ERB>

F;194-459/Domain: protein kinase homology <KIN>

F;202-210/Region: protein kinase ATP-binding motif

F;229/Active site: Lys #status predicted

Query Match 26.4%; Score 1766.5; DB 1; Length 698;

Best Local Similarity 52.2%; Pred. No. 1.6e-66;

Matches 374; Conservative 80; Mismatches 137; Indels 125; Gaps 18;

Qy 555 GPEADQCVCAHYKDPFPFCVACRPSGVKPDLSYMPIWKFPDEEGACQPCINCTHSCVDL 614

Db 60 GP--DHCWKCAHFIDGPHCVACAGVLGENDTL-VWKYADANAVCOLCHPNCTRGCKGP 116

Qy 615 DRKGCPAEQRASPLTISVAV--GILLVVLGVVFGILIKRQOKIRKYTMRLQLQTEL 673

Db 117 GLEGCP---NGSKTPSIAAGVVGGLCLVVGGLGILYLR--HIVKRTLRLLQEREL 172

Qy 674 VEPLTPSGAMPNQAMRILKETELRKKVVLGSGAGFVYKGIWIPDGENVKIPVAIKVL 733

Db 173 VEPLTPSGEAPNQAHRLKETEFKKVKVLGSGAGFVYKGLWIPEGEKVKIPVAIKEL 232

Qy 734 ENTSPKANKEILDYAVYVAGVSPVSRLLAGILCTSTVQLVTQOLMPYGCILLDHVRNGR 793

Db 233 EATSPKANKEILDYAVYVAGVSDNPHVCRLLGILCTSTVQLTQOLMPYGCILLDYIREHKN 292

Qy 794 LGSODLLNCWQIAKMSYLEDVRLVHRDLAARNVLKSPNKHVITDFGLARLLDIDETE 853

Db 293 IGSQYLLNCWQIAKGNVYLERLVRDLAARNVLKTPQHKVITDFGLAKLLGADEKE 352

Qy 854 YHADGGKVPKIMMALESILRRRFTHQSDVMSYGYVTWELMTFGAKPYDGPAREIPDLLE 913

Db 353 YHAEGGKVPKIMMALESILHRIYTHQSDVMSYGYVTWELMTFGSKPYDGPASEISSVLE 412

Qy 914 KGERLPOPPCTTIDVYMWKCMWIDSECRPRELSEFSESRMARDPORFVVIQ-NEDLG 972

Db 413 KGERLPOPPCTTIDVYMWKCMWIDADSRPKRELIAEFKWARDPRVILVIOGDRMH 472

Qy 973 PASPLDSTFYRSLLEDDMDGLVDAEYLVPOQGFCCDPAPGAGGMVHRRSSSTRSG 1032

Db 473 LPSPDTSKFYRLMEBEDMEDIVDAEYLVPHQGF-----NSPST--- 513

Qy 1033 GGLDLTGLSESEAPRSP-----APSEGAGSDVFDGLGMGAAGLQSLPHTHDPSPLO 1087

Db 514 -----SRTPLLSLSATSNNSATCID-----RNGQGHFVREDSFVQ 550

Qy 1088 RYSEDPVPLPSET--DGYVAPLTCPOPEYVNPQDVVRPSPREGPLPAARPAGATLE 1145

Db 551 RYSEDPVPLPSET--DGYVAPLTCPOPEYVNPQDVVRPSPREGPLPAARPAGATLE 1145

Qy 1146 RAKTLSPGKNGVVKDVF-----AFGGAVENPEYLTLPQGAAPQHPPPAF 1190

Db 586 ----TAMVQNOIYNNISLTAISKLPMSRYQNSHSTAVDNPEYL-----NTNQSPLA 633

Qy 1191 SPAFDNLVYWDQ-----DPPE-----RGAPPSTFKGTTAENPEYVLGLDVP 1231

Db 634 KTVFESSPYWIOSGNHQINLNDPDYQQDFLPNETKPNGLLKVPAAENPEYLRVAAP 689

RESULT 12

TVYUHV

protein-tyrosine kinase (EC 2.7.1.112) erbB - avian erythroblastosis virus (strain H)

C;Species: avian erythroblastosis virus

C;Date: 18-Apr-1984 #sequence_revision 18-Apr-1984 #text_change 09-Jul-2004

C;Accession: A00644; A38022

R;Yamanoto, T.; Nishida, T.; Miyajima, N.; Kawai, S.; Ooi, T.; Toyoshima, K. Cell 35, 71-78, 1983

A;Title: The erbB gene of avian erythroblastosis virus is a member of the src gene fami

A;Reference number: A00644; MUID:84026539; PMID:6313229

A;Accession: A00644

A;Molecule type: DNA

A;Residues: 1-604 <YAM>

A;Cross-references: UNIPROT:P00535; GB:X01216; NID:g209676; PIDN:AAA42400.1; PID:g20967

R;Debuire, B.; Henry, C.; Benaisse, M.; Biserte, G.; Claverie, J.M.; Saule, S.; Martin, Science 224, 1456-1459, 1984

A;Title: Sequencing the erba gene of avian erythroblastosis virus reveals a new type of

A;Reference number: A38022; MUID:84223957; PMID:6328658

A;Accession: A38022

A;Molecule type: DNA

A;Residues: 1-28,'W',30-139,'F',141-145,'V',147-152 <DEB>

A;Cross-references: GB:X02006

C;Genetics:

A;Gene: erbB

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific

F;130-395/Domain: protein kinase homology <KIN>

F;138-146/Region: protein kinase ATP-binding motif

F;165/Active site: Lys #status predicted

Query Match 25.4%; Score 1703; DB 1; Length 604;

Best Local Similarity 52.2%; Pred. No. 6.1e-64;

Matches 360; Conservative 76; Mismatches 128; Indels 126; Gaps 16;

Qy 564 CAHYKDPFPFCVACRPSGVKPDLSYMPIWKFPDEEGACQPCINCTHSCVDLDDKGCQAEQ 623

Db 3 CAHFIDGPHCVACAGVLGENDTL-VRKYADANAVCOLCHPNCTRGCKPGLEGCP--- 58

Qy 624 RASPLTISVAV--GILLVVLGVVFGILIKRQOKIRKYTMRLQLQTELVEPLTPSGA 682

Db 59 NGSKTPSIAAGVVGGLCLVVGGLGILYLR--HIVKRTLRLLQERELVEPLTPSGE 117

Qy 683 MPNQAQMRILKETELRKKVVLGSGAGFVYKGIWIPDGENVKIPVAIKVRENTSPKANK 742

Db 118 APNQAHLRLKETEFKKVKVLGSGAGFVYKGLWIPEGEKVKIPVAIKLEATSPKANK 177

Db 936 LAARNVLRLAGEDH-----DFGLAKLLSSDSNEYKAAAGKMPKIMWALECIRNRVFTSK 991
QY 880 SDVMSVGVVWELMTFGAKPYDGI PAREIPDLLEKGERLPPOPICTIDVVMVWKWMD 939
Db 992 SDVWAGVTWELTTFQORHENIPAKIDPLEVGLKLEQPEICSLDIYCTLSWHLDD 1051
QY 940 SECRPRFRELVSFBSRMARDPQRFVVIQNEBGL--PASPLDSTFYRSLLEDD---DMGDL 994
Db 1052 AAMRPTFKQLTTVFAEPARDGRLAILGDKFRLPA-----YTSQDEKOLIRKLAPT 1104
QY 995 VDABEYLVPQGFPCPDPAAGAGVHRRSSSTRSGGDLTLGLPESEBAP----- 1048
Db 1105 TDGSEAIAPKDDYLOPKAALGPS-----HRTDCT-----DENPKLNRVC 1143
QY 1049 RSLAPSEAGSDFVFG---DLGWAAGKGLQLSLTHDPSPLQRYSDPTVPLPSETDGVV 1105
Db 1144 KDFSNKNSGDDERSSAREVGNLK-----LPLVPSDDYL 1182
QY 1106 APLTCSPPQPEYVNPQDVRPQPPREGPLPAARPAGATLERAKTLSPGKNGVVKDVFAFG 1165
Db 1183 MP--TCQPGPNNNMN-----NPNQNNMAAGVAAGYM-----DLIGVP 1220
QY 1166 GAVENPEYL-----TPOGGAAPQH-----PPAFSP-AFNLVYWD 1201
Db 1221 VSDNPEYLLNAOTLVGESPIPTQTIGIPVMGPGGTMEVKVPMGPGSEPTSSDHEYYND 1279

RESULT 14
S35745
C:Species: avian erythroblastosis virus
C:Date: 03-Mar-1994 #sequence_revision 26-May-1995 #text_change 09-Jul-2004
C:Accession: S35745
R:Vennstrom, B.; Vennstrom, B.; Jansen, M.; Graf, T.; Beug, H.; Hayman, M.J.
Submitted to the EMBL Data Library, March 1993
A:Reference number: S35745
A:Accession: S35745
A:Molecule type: DNA
A:Residues: 1-544 <VEN>
A:Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X12707
C:Genetics:
C:Gene: erbB
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific P
F:135-400/Domain: protein kinase homology <KIN>
F:143-151/Region: protein kinase ATP-binding motif
F:170/Active site: Lys #status predicted

Query Match 24.6%; Score 1647; DB 2; Length 544;
Best Local Similarity 54.9%; Pred. No. 1.2e-61;
Matches 345; Conservative 70; Mismatches 121; Indels 92; Gaps 15;

QY 555 GPEADOCVACAHYKDPFVCARCPGVKPDLSYMPWKFPDEBACQPCPINCTHSCVDL 614
Db 1 GP--DHCMKAHFIDGPHCVKACPAVLGENDTL-VMKYADANAVCOLCHPNCTRGCKGP 57
QY 615 DKGCPAEORASPLTSIVSAVV-GILLVVVLGVVFGILIKRQOKIRKYTMRLLOQTEL 673
Db 58 GLEGCP---NGSKTPSIAGVGGGLCLVVGIGIGLYLRR-HIVKRTLRLLQEREL 113
QY 674 VEPLTSGAMPNOAQRILKETELRKVKVLGSGAFGVYKGIWIPGENVKIPVAIKVL 733
Db 114 VEPLTSGEAPNOAHLILKETEFKKVKVLGFGAFGVYKGLWIPGEKVTIPVAIKEL 173
QY 734 ENTSPKANKEILDEAYVMAGVSPYSRLIGICLTSTVQLVTLQMPYGCLLDHVRENRR 793
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLIGICLTSTVQLITQMPYGCLLDVIREHKD 233
QY 794 LGSQDILNWCQIAKGNYSYLEDVRLVHRDLAARNVLKSPNHVKITDFGLARLLDDETE 853
Db 234 IGSQYLLNWCQIAKGNVLEERHVRDLAARNVLKTPQHVKITDFGLAKQLGADEKE 293
QY 853 IGSQYLLNWCQIAKGNYSYLEDVRLVHRDLAARNVLKSPNHVKITDFGLARLLDDETE 853
Db 293 IGSQYLLNWCQIAKGNVLEERHVRDLAARNVLKTPQHVKITDFGLAKQLGADEKE 293

QY 854 YHADGKVPKIMWALESIILRRRTHQSDVMSVGVTVWELMTFGAKPYDGI PAREIPDLLE 913
Db 294 YHAEGGKVPKIMWALESIILHRYTHQSDVMSVGVTVWELMTFGSKPKPYDGI PASEISSVLE 353
QY 914 KGERLPPOPICTIDVVMVWKWMDSECRPRFRELVSFBSRMARDPQRFVVIQ-NEDIG 972
Db 354 KGERLPPOPICTIDVVMVWKWMSDADSRPKRELIARFESKWARDPPRYLVITQGERMH 413
QY 973 PASPLDSTFYRSLLEDDMDGLVDABEYLVPQGFPCPDPAAGAGVHRRSSSTRSG 1032
Db 414 LPSPTDSKRYTLMSEEDMEDIVDAEYLVPHQGF-----NSPST--- 454
QY 1033 GGDLTILGLPESEBAPRSL-----APSEGAGSDVFDGLMGAAKGLQSLTHDPSPLQ 1087
Db 455 -----SRTPLLSLSATSNNSATNCIDRNGG-----H----- 481
QY 1088 RYSEDPTVLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPREGPLPAARPAGAT-LER 1146
Db 482 -----PVREDGFL-----PAPEYVQ--LMPKKPSTAMVQNIYIISLTAISK 523
QY 1147 AKTLSPGKNGVVKDVFAFGAVENPEYL 1174
Db 524 LPIDSRYN-----SHSTAVDNPEYL 544

RESULT 15
S00727
C:Species: avian erythroblastosis virus
C:Date: 01-Dec-1989 #sequence_revision 01-Dec-1989 #text_change 09-Jul-2004
C:Accession: S00727
R:Scotting, P.; Vennstrom, B.; Jansen, M.; Graf, T.; Beug, H.; Hayman, M.J.
Oncogene Res. 1, 265-278, 1987
A:Title: Common site of mutation in the erbB gene of avian erythroblastosis virus mutat
A:Reference number: S00727; MUID:88217326; PMID:2897102
A:Accession: S00727
A:Molecule type: DNA
A:Residues: 1-545 <SCO>
A:Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X06943
C:Genetics:
C:Gene: erbB
C:Superfamily: epidermal growth factor receptor; protein kinase homology
C:Keywords: ATP; phosphotransferase
F:135-400/Domain: protein kinase homology <KIN>
F:143-151/Region: protein kinase ATP-binding motif

Query Match 24.5%; Score 1640; DB 2; Length 545;
Best Local Similarity 54.9%; Pred. No. 2.3e-61;
Matches 345; Conservative 69; Mismatches 122; Indels 92; Gaps 15;

QY 555 GPEADOCVACAHYKDPFVCARCPGVKPDLSYMPWKFPDEBACQPCPINCTHSCVDL 614
Db 1 GP--DHCMKAHFIDGPHCVKACPAVLGENDTL-VMKYADANAVCOLCHPNCTRGCKGP 57
QY 615 DKGCPAEORASPLTSIVSAVV-GILLVVVLGVVFGILIKRQOKIRKYTMRLLOQTEL 673
Db 58 GLEGCP---NGSKTPSIAGVGGGLCLVVGIGIGLYLRR-HIVKRTLRLLQEREL 113
QY 674 VEPLTSGAMPNOAQRILKETELRKVKVLGSGAFGVYKGIWIPGENVKIPVAIKVL 733
Db 114 VEPLTSGEAPNOAHLILKETEFKKVKVLGFGAFGVYKGLWIPGEKVTIPVAIKEL 173
QY 734 ENTSPKANKEILDEAYVMAGVSPYSRLIGICLTSTVQLVTLQMPYGCLLDHVRENRR 793
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLIGICLTSTVQLITQMPYGCLLDVIREHKD 233
QY 794 LGSQDILNWCQIAKGNYSYLEDVRLVHRDLAARNVLKSPNHVKITDFGLARLLDDETE 853
Db 234 IGSQYLLNWCQIAKGNVLEERHVRDLAARNVLKTPQHVKITDFGLAKQLGADEKE 293
QY 854 YHADGKVPKIMWALESIILRRRTHQSDVMSVGVTVWELMTFGAKPYDGI PAREIPDLLE 913
Db 294 YHAEGGKVPKIMWALESIILHRYTHQSDVMSVGVTVWELMTFGSKPKPYDGI PASEISSVLE 353

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:14:59 ; Search time 167.437 Seconds
(without alignments)
4233.600 Million cell updates/sec

Title: US-09-806-703A-4_COPY_24_1255

Perfect score: 6694

Sequence: 1 QVCTGTDMLKRLPASPETHL.....TFKGTPTAENPEYGLDVPV 1232

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Uniprot 02:*

1: uniprot_sprot:*

2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6688	99.9	1255	1 ERB2 HUMAN	P04626 homo sapien
2	6195	92.5	1259	2 O18735	O18735 canis famil
3	5829.5	88.1	1259	2 O8K3F9	O8K3F9 rattus norv
4	5895.5	88.1	1259	2 O6P732	O6P732 rattus norv
5	5895.5	88.1	1259	2 AAH61863	AAH61863 rattus no
6	5895	88.1	1257	1 ERB2 RAT	P06494 rattus norv
7	5894.5	88.1	1254	1 ERB2 MESAU	Q60553 mesocricetu
8	5877.5	87.8	1305	2 O6ZPE0	Q6ZPE0 mus muscu
9	5877.5	87.8	1305	2 BAC98297	BAC98297 mus muscu
10	4207	62.8	881	2 O8C0E7	O8C0E7 m mus muscu
11	3160.5	47.2	1209	2 Q9QX70	Q9QX70 rattus norv
12	3159.5	47.2	711	2 O80V89	O80V89 mus muscu
13	3155	47.1	1210	1 EGFR HUMAN	P00533 homo sapien
14	3155	47.1	1210	2 AAS83109	AAS83109 homo sapien
15	3143.5	47.0	1209	2 O8MIL8	O8MIL8 sus scrofa
16	3135	46.8	1210	1 EGFR_MOUSE	Q01279 mus muscu
17	3132	46.8	1210	2 Q9EP98	Q9EP98 mus muscu
18	2999.5	44.8	1308	1 ERB4 HUMAN	Q15303 homo sapien
19	2982.5	44.6	1292	2 Q6UA28	Q6UA28 rattus norv
20	2981.5	44.5	1191	2 Q7S2F7	Aaq77349 rattus no
21	2981.5	44.5	1191	2 Q7S2F7	O7szf7 brachydanio
22	2980.5	44.5	1308	2 Q6UA29	Q6ua29 rattus norv
23	2980.5	44.5	1308	2 Aaq77348	Aaq77348 rattus no
24	2972.5	44.4	1191	2 Q6VQA3	Q6vqa3 brachydanio
25	2972.5	44.4	1191	2 Aaq91602	Aaq91602 brachydan
26	2965.5	44.3	1308	1 ERB4 RAT	Q62956 rattus norv
27	2864	42.8	1209	2 O6XJ78	O6xjv8 xiphophorus
28	2864	42.8	1209	2 AAP55673	Aap55673 xiphophor
29	2742.5	41.0	1165	2 Q9YH40	Q9yh40 xiphophorus
30	2729.5	40.8	1137	2 Q9W6P6	Q9w6f6 gallus gall
31	2711.5	40.5	1167	1 XMRK_XIDWA	PI3388 xiphophorus

32 2436.5 36.4 1342 1 ERB3 HUMAN
33 2367 35.4 1339 1 ERB3 RAT
34 2317 34.6 1328 2 P79754
35 2212.5 33.1 1305 2 O8AW81
36 2063 30.8 1429 2 Q7PPN5
37 2049.5 30.6 1340 2 Q7PHU6
38 2044.5 30.5 1433 2 Q9B1H9
39 2025.5 30.3 435 2 Q6ZMM4
40 2025.5 30.3 435 2 BAD18701
41 2009 30.0 1325 2 Q6SAI6
42 2009 30.0 1325 2 AAR85155
43 2009 30.0 1325 2 AAR85225
44 2009 30.0 1325 2 AAR85252
45 2009 30.0 1325 2 AAR85294

P21860 homo sapien
Q62799 rattus norv
P79754 fugu tubrip
O8aw81 brachydanio
Q7ppn5 anopheles g
Q7phus anopheles g
Q9b1h9 anopheles g
Q6zmm4 homo sapien
Bad18701 homo sapi
Q6sa16 drosophila
Aar85155 drosophil
Aar85225 drosophil
Aar85252 drosophil
Aar85294 drosophil

ALIGNMENTS

RESULT 1

ERB2 HUMAN
ID ERB2 HUMAN STANDARD; PRT; 1255 AA.
AC P04626;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2) (Tyrosine kinase-type cell
DE surface receptor HER2) (MLN 19).
DE Name=ERBB2; Synonyms=HER2, NGL, NEU;
GN Homo sapiens (Human).
OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=86118663; PubMed=3003577;
RA Yamamoto T., Ikawa S., Akiyama T., Semba K., Nomura N., Miyajima N.,
RA Saito T., Toyoshima K.;
RT "Similarity of protein encoded by the human c-erb-B-2 gene to
RT epidermal growth factor receptor.";
RL Nature 319:230-234 (1986).
RN [2]
RP SEQUENCE FROM N.A., AND VARIANT ALA-1170.
RX MEDLINE=86070181; PubMed=2999974;
RA Cousens L., Yang-Peng T.L., Liao Y.C., Chen E., Gray A., McGrath J.,
RA Seeburg P.H., Hiebermann T.A., Schleisinger J., Francke U.,
RA Levinson A., Ullrich A.;
RT "Tyrosine kinase receptor with extensive homology to EGF receptor
RT shares chromosomal location with neu oncogene.";
RL Science 230:1132-1139 (1985).
RN [3]
RP SEQUENCE FROM N.A., AND VARIANTS CYS-452; VAL-655 AND ALA-1170.
RX Rieder M.J., Livingston R.J., Daniels M.R., Montoya M.A., Chung M.-W.,
RA Miyamoto K.E., Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D.,
RA Schackwitz W.S., Sherwood J.K., Witkar L.A., Nickerson D.A.;
RT "NIH-SNPs, environmental genome project, NIHES ES15478, Department
RT of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";
RL Submitted (DEC-2002) to the EMBL/GenBank/DBJ databases.
RN [4]
RP SEQUENCE OF 737-1031 FROM N.A.
RX MEDLINE=86016729; PubMed=2995967;
RA Semba K., Kamata N., Toyoshima K., Yamamoto T.;
RT "A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-
RT erbB-1/epidermal growth factor-receptor gene and is amplified in a
RT human salivary gland adenocarcinoma.";
RN [5]
RP Proc. Natl. Acad. Sci. U.S.A. 82:6497-6501 (1985).
RX VARIANTS VAL-654 AND VAL-655
RX MEDLINE=93194196; PubMed=8095488;
RA Ehsani A., Low J., Wallace R.B., Wu A.M.;
RT "Characterization of a new allele of the human ERBB2 gene by allele-
RT specific competition hybridization.";

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Potential.
Cytoplasmic (Potential).
Protein kinase.
ATP (By similarity).
ATP (By similarity).
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
By similarity.
Phosphotyrosine (by autocatalysis) (By
similarity).
Phosphotyrosine (by autocatalysis) (By
similarity).
N-linked (GlcNAc. . .) (Potential).
N-linked (GlcNAc. . .) (Potential).
N-linked (GlcNAc. . .) (Potential).
N-linked (GlcNAc. . .) (Potential).
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N-linked (GlcNAc. . .) (Potential).
N-linked (GlcNAc. . .) (Potential).
W -> C.
/FTid=VAR_016317.
I -> V (in allele B3; dbSNP:1801201).
/FTid=VAR_004077.
I -> V (in allele B2 and allele B3;
dbSNP:1801200).
/FTid=VAR_004078.
P -> A.
/FTid=VAR_016318.
```

```

/FTid=VAR_004071. B2 and allele B3;
I -> V (in allele B2)
dbSNP:1801200).
/FTid=VAR_004078.
P -> A.
/FTid=VAR_016318.

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FT HBLIX 175 177
FT TURN 178 179

Query Match 99.9%; Score 6688; DB 1; Length 1255;
Best Local Similarity 99.8%; Pred. No. 0;
Matches 1230; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 QVCTGTDMLKRLPASPTHLDMLRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 60
DB 24 QVCTGTDMLKRLPASPTHLDMLRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 83

QY 61 VLAHNOVROVPLQRLRIVRGTOLFDNYALAVLDNGDPLNNTTPTVGSPGRLRELQLR 120
DB 84 VLAHNOVROVPLQRLRIVRGTOLFDNYALAVLDNGDPLNNTTPTVGSPGRLRELQLR 143

QY 121 SLTEILKGGVLIQBNPOLCYQDTILWKDI FHKNNQLALTLDNRSRACHPCSPMCKGSR 180
DB 144 SLTEILKGGVLIQBNPOLCYQDTILWKDI FHKNNQLALTLDNRSRACHPCSPMCKGSR 203

QY 181 CWGESSEDCQSLTRTVCCAGCARCKGPLPTDCCHQCAGCTGPKHSDCLACLFHNSGI 240
DB 204 CWGESSEDCQSLTRTVCCAGCARCKGPLPTDCCHQCAGCTGPKHSDCLACLFHNSGI 263

QY 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVLTSDVGSCTLVCPHNEVYT 300
DB 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVLTSDVGSCTLVCPHNEVYT 323

QY 301 AEDGTORCEKSPCARVCYGLGMEHLREVRVTSANI QRFAGCKKIFGSLAFLPESFDG 360
DB 324 AEDGTORCEKSPCARVCYGLGMEHLREVRVTSANI QRFAGCKKIFGSLAFLPESFDG 383

QY 361 DPASNTAPLQEQVETLEETIGYLIYISAWPDSLPLDSVFQNLQVIRGRIILHNGAYS 420
DB 384 DPASNTAPLQEQVETLEETIGYLIYISAWPDSLPLDSVFQNLQVIRGRIILHNGAYS 443

QY 421 TLOGLGISWLGSLRLSRLGSLALIHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE 480
DB 444 TLOGLGISWLGSLRLSRLGSLALIHNTHLCFVHTVPWDQLFRNPHQALLHTANRPEDE 503

QY 481 CVBEGGLACHOLCARGHCWGPGTQVCNCSQFLRGQECVSCRVLQGLPREYVVARHCLPC 540
DB 504 CVBEGGLACHOLCARGHCWGPGTQVCNCSQFLRGQECVSCRVLQGLPREYVVARHCLPC 563

QY 541 HPECQPNQSVTCFGEADQVACAHYKDPFPCVAPCSGKPDLSYMPWKPFDEEGAC 600
DB 564 HPECQPNQSVTCFGEADQVACAHYKDPFPCVAPCSGKPDLSYMPWKPFDEEGAC 623

QY 601 QPCPINCHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRROQKIR 660
DB 624 QPCPINCHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRROQKIR 683

QY 661 KYTMRLLQETELVEPLTPSGAMPNQAOMRLKETELRKVKVGLSGAGFGTVYKGIWIPDG 720
DB 684 KYTMRLLQETELVEPLTPSGAMPNQAOMRLKETELRKVKVGLSGAGFGTVYKGIWIPDG 743

QY 721 ENVKIPVAIKVLRNTPSKANKETLDEAYVMAGVSPYVSRLLGICLTSTVQLVTLMPY 780
DB 744 ENVKIPVAIKVLRNTPSKANKETLDEAYVMAGVSPYVSRLLGICLTSTVQLVTLMPY 803

QY 781 GCLLDHVNRGRIGSDLLNCWQIAKMSYLEDVRLVHRDLAARNVLVKSPNHVKITD 840
DB 804 GCLLDHVNRGRIGSDLLNCWQIAKMSYLEDVRLVHRDLAARNVLVKSPNHVKITD 863

QY 841 FGLARLLDIDETEHADGGKVPKIMWALESILRRFTHQSDVMSYGVVWELMTFGAKPY 900
DB 864 FGLARLLDIDETEHADGGKVPKIMWALESILRRFTHQSDVMSYGVVWELMTFGAKPY 923

QY 901 DGPAREIPDLLEKGERLPQPPICITIDVYIMVWKMMIDSECRPRFRELVSERWARDP 960
DB 924 DGPAREIPDLLEKGERLPQPPICITIDVYIMVWKMMIDSECRPRFRELVSERWARDP 983

QY 961 QRFVVIQNEBGLGPASPLDSTFYRSLLEDDDMGDLVDAEYLVPOQGFCCDDPAPGAGMW 1020

DB 984 QRFVVIQNEBGLGPASPLDSTFYRSLLEDDDMGDLVDAEYLVPOQGFCCDDPAPGAGMW 1043

QY 1021 HHRHRSSTRSGGDLTLGLEPSEEBAPRSLAPSEAGSDVDFDGLGMAAKGLQSLPT 1080

DB 1044 HHRHRSSTRSGGDLTLGLEPSEEBAPRSLAPSEAGSDVDFDGLGMAAKGLQSLPT 1103

QY 1081 HDPSPLQRYSESDTVPPLSETDGYVAPLTCSPQPEYVNOBVDVPPQPPSPREGPLPAARPA 1140

DB 1104 HDPSPLQRYSESDTVPPLSETDGYVAPLTCSPQPEYVNOBVDVPPQPPSPREGPLPAARPA 1163

QY 1141 GATLERAKTSLSCGKGVKVDVFAFGGAVENPEVLTPOGGNAAPQHPHPPAPESPAFDNLYYW 1200

DB 1164 GATLERAKTSLSCGKGVKVDVFAFGGAVENPEVLTPOGGNAAPQHPHPPAPESPAFDNLYYW 1223

QY 1201 DQDPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1232

DB 1224 DQDPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1255

RESULT 2

O18735 PRELIMINARY; PRT; 1259 AA.

AC O18735; 01-JAN-1998 (T-EMBLrel. 05, Created)

DT 01-JAN-1998 (T-EMBLrel. 05, Last sequence update)

DT 01-MAR-2004 (T-EMBLrel. 26, Last annotation update)

DE Erbb-2.

OS Canis familiaris (Dog).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

NCBI_TaxID=9615;

ON [1]

RN SEQUENCE FROM N.A.

RP Yokota H.; (OCT-1997) to the EMBL/GenBank/DBJ databases.

RL Submitted (OCT-1997) to the EMBL/GenBank/DBJ databases.

EMBL; AB008451; BAA23127.1; -.

DR HSSP; P04626; 1N82.

DR GO; GO:0016020; C:membrane; IEA.

DR GO; GO:0005524; F:ATP binding; IEA.

DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.

DR GO; GO:0016740; F:transferrase activity; IEA.

DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.

DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.

DR InterPro; IPR002048; EF-hand.

DR InterPro; IPR000494; EGFR L.

DR InterPro; IPR006211; Furin-like.

DR InterPro; IPR006212; Furin-repeat.

DR InterPro; IPR009030; Grow_fac_recept.

DR InterPro; IPR011009; Kinase like.

DR InterPro; IPR000719; Prot_kinase.

DR InterPro; IPR001245; Tyr_kinase.

DR InterPro; IPR008266; Tyr_kinase_AS.

DR InterPro; IPR004019; Yfp_motif.

DR Pfam; PF00757; Furin-like; 1.

DR Pfam; PF00069; Kinase; 1.

DR Pfam; PF02757; VLP_2.

DR Pfam; PF01030; Recep_L domain; 2.

DR PRINTS; PR00109; TYRKINASE.

DR ProDom; PD000001; Prot_kinase; 1.

DR SMART; SM00261; FU; 3.

DR SMART; SM00219; TyrKc; 1.

DR PROSITE; PS00018; EF_HAND; UNKNOWN 1.

DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

DR PROSITE; PS00011; PROTEIN_KINASE_DOM; 1.

DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

KW ATP-binding; Kinase; Transferase; Tyrosine-protein kinase.

SQ SEQUENCE 1259 AA; 137989 MW; E37364D49C4ACD46 CRC64;

Query Match 92.5%; Score 6195; DB 2; Length 1259;
Best Local Similarity 92.4%; Pred. No. 3.2e-314;
Matches 1140; Conservative 39; Mismatches 52; Indels 6; Gaps 2;

QY 1 QVCTGTDMLKRLPASPTHLDMLRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 60

Db 24 QVCTGDMKRLRSPASETHLDMRLHLYQGVQVQGNLELYLPANASLSFLQDIQEVQY 83
QY 61 VLIAHNQVQLRIQRIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
Db 84 VLIHNSQVQLRIQRIRVRGTQLFEDNYALAVLDNGDPLEGGIPAPGAAQGLRELQLR 143
QY 121 SLTEILKGGVLIQRNQLCYQDILMKDIFKKNQALALTLIDNRSRACHPCSPCKGSR 180
Db 144 SLTEILKGGVLIQRNQLCYQDILMKDIFKKNQALALTLIDNRSRACHPCSPCKDAH 203
QY 181 CWGESSEDQSLRTRTCAGGACRCKGLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGASSGDQSLRTRTCAGGACRCKGPQPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 263
QY 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVSGCTLVCLPLNQEVY 300
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTSCPNYLSLTDVSGCTLVCLPLNQEVY 323
QY 301 AEDGTORCKSKPCARVCYGLGMEHLREVRVTSANIOEFAGCKIFGSLAPLPSFPG 360
Db 324 AEDGTORCKSKPCARVCYGLGMEHLREVRVTSANIOEFAGCKIFGSLAPLPSFPG 383
QY 361 DPASNTAPLQPEQLQVFTELEITGYLYISAMPDSLPLSVFONQVIRGRILHNGAYSIL 420
Db 384 DPASNTAPLQPEQLRVEALEEITGYLYISAMPDSLPLSVFONQVIRGRVLDGAYSIL 443
QY 421 TLOGLGISWGLRSLRELGLALIHNNHLCFVHTVPWDQLFRPNHQALLHANKPEDE 480
Db 444 TLOGLGISWGLRSLRELGLALIHNNHLCFVHTVPWDQLFRPNHQALLHANSRPEE 503
QY 481 CVGEGIALCHOLCARGHCWGPPTQCVNCSQFIRGQECVECRVLQGLPREYVNAHCLPC 540
Db 504 CVGEGIALCP-CAHGHWCWGPPTQCVNCSQFIRGQECVECRVLQGLPREYVNAHCLPC 562
QY 541 HPECQPNQSVTCFSGPEADQCVACAHYKDPFPFCVACRCPGSKPDLSPYMPKPPDEGAC 600
Db 563 HSECQPNQSVTCFSGPEADQCVACAHYKDPFPFCVACRCPGSKPDLSPYMPKPPDEGAC 622
QY 601 QPCPNCTHSCVDLDKGPAPORASPLTSIVSAGVILLVVLGVVFGILIKRQOKTR 660
Db 623 QPCPNCTHSCVDLDKGPAPORASPLTSIVSAGVILLVVLGVVFGILIKRQOKTR 682
QY 661 KYTMRLLQETELVEPLTPSGAMPNOAQRILKTELKVKVLGSGAGFTVYKGIWIPDG 720
Db 683 KYTMRLLQETELVEPLTPSGAMPNOAQRILKTELKVKVLGSGAGFTVYKGIWIPDG 742
QY 721 ENVKIPVAIKVLRNTPSPRANKIELDEAYVMAGVGSPPYVSRLLGICLTSTVQLVTQMPY 780
Db 743 ENVKIPVAIKVLRNTPSPRANKIELDEAYVMAGVGSPPYVSRLLGICLTSTVQLVTQMPY 802
QY 781 GCLLDHVRNREGLSGQDILNMCQIAGKMSVLEVDVLRHDLAARNVLKSPNHVKITD 840
Db 803 GCLLDHVRNREGLSGQDILNMCQIAGKMSVLEVDVLRHDLAARNVLKSPNHVKITD 862
QY 841 FGLARLLDIDEYHADGKVPKKNWALSILRRRTHQSDVMSYGVTVWELMTFCAKPY 900
Db 863 FGLARLLDIDEYHADGKVPKKNWALSILRRRTHQSDVMSYGVTVWELMTFCAKPY 922
QY 901 DGIPAREIPDLLEKGRRLPQPICTIDVTVMYKMWIDSECRPRFELVSEFNRARDP 960
Db 923 DGIPAREIPDLLEKGRRLPQPICTIDVTVMYKMWIDSECRPRFELVSEFNRARDP 982
QY 961 QRFVVLQNEIDLGPASPLDSTFYRSLLDDMDGLVDAEYLYVPOQGFCDPAPGAGMV 1020
Db 983 QRFVVLQNEIDLGPASPLDSTFYRSLLDDMDGLVDAEYLYVPOQGFCDPAPGAGMV 1042
QY 1021 HHRHRSSTRSQGGDLTLGLEPSEERAPSLAPSEAGSDVFDGLGMAAKGLQSLPT 1080
Db 1043 HHRHRSSTRSQGGDLTLGLEPSEERAPSLAPSEAGSDVFDGLGMAAKGLQSLPT 1102
QY 1081 HPSPLQRYSEDPVLPSETDGYVAPLTCSPQPEYVNOQVDRPQPPSPREGPLPAARPA 1140

Db 1103 QDPSPLQRYSEDPVLPSETDGYVAPLTCSPQPEYVNOQVDRPQPPSPREGPLPAARPA 1162
QY 1141 GATLER-----AKTISPGKGVVVKDVFARFGAVENPEYLTPOGGAAPQHPHPPAFSPAFD 1195
Db 1163 GATLERPKTSLSPKISPGKGVVVKDVFARFGAVENPEYLTPOGGAAPQHPHPPAFSPAFD 1222
QY 1196 NLYYWDQDPSERGGPSTFKTPTAENPEYLGLDVPE 1232
Db 1223 NLYYWDQDPSERGGPSTFKTPTAENPEYLGLDVPE 1259

RESULT 3

Q8K3F9
ID Q8K3F9 PRELIMINARY; PRT; 1259 AA.
AC Q8K3F9; DT 01-OCT-2002 (TREMELrel. 22, Created)
DT 01-OCT-2002 (TREMELrel. 22, Last sequence update)
DT 01-MAR-2004 (TREMELrel. 26, Last annotation update)
DE Neu protoconcoprotein.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Rattus.
OX NCBI_TaxId=10116;
RN [1]
RC SEQUENCE FROM N.A.
RC STRAIN=BDIX;
RA Watson P.A., Kim K., Chen K.-S., Gould M.N.;
RA Submitted (MAY-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AY116182; RAN50093.1; -.
DR HSSP; P06494; 1N8Y.
DR GO; GO:0016020; C.membrane; IEA.
DR GO; GO:0005524; F.ATP binding; IEA.
DR GO; GO:0005006; F.epidermal growth factor receptor activity; IEA.
DR GO; GO:0016740; F.transferrase activity; IEA.
DR GO; GO:0006468; P.protein amino acid phosphorylation; IEA.
DR GO; GO:0007169; P.transmembrane receptor protein tyrosine kin. .; IEA.
DR InterPro; IPR002048; EF-hand.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Grow_fac_recept.
DR InterPro; IPR011009; Kinase like.
DR InterPro; IPR000719; Prot_kinase.
DR InterPro; IPR001245; Tyr_kinase.
DR InterPro; IPR008266; Tyr_kinase_AS.
DR InterPro; IPR004019; YLP_motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF01030; Recep_L_domain; 2.
DR Pfam; PF02757; YLP_2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Prot_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00219; TyrK; 1.
DR PROSITE; PS00018; EF_HAND; UNKNOWN 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferrase; Tyrosine-protein kinase.
SQ SEQUENCE 1259 AA; B724BD5CC33AE953 CRC64;

Query Match 88.1%; Score 5899.5; DB 2; Length 1259;
Best Local Similarity 88.0%; Pred. No. 7,8e-299;
Matches 1085; Conservative 50; Mismatches 97; Indels 1; Gaps 1;

QY 1 QVCTGDMKRLRSPASETHLDMRLHLYQGVQVQGNLELYLPANASLSFLQDIQEVQY 60
Db 27 QVCTGDMKRLRSPASETHLDMRLHLYQGVQVQGNLELYLPANASLSFLQDIQEVQY 86
QY 61 VLIAHNQVQLRIQRIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVT-CASPGGLRELQ 119
Db 87 VLIAHNQVQLRIQRIRVRGTQLFEDNYALAVLDNRDPQDNVAASPTGRTPEGLRELQ 146

QY 120 RSLTEILKGGVLIQRNPOLCYOITILWKDIFHRNQLALTLIDNRSRACHPCSPMKGS 179
 DB 147 RSLTEILKGGVLIQRNPOLCYOITILWKDIFHRNQLALTLIDNRSRACHPCSPMKGS 206
 QY 180 RCGESSEDCQSLTRTVACGACGKGLPTDCCHOCACAGCTGPKHSDCLACLHNHSG 239
 DB 207 HCWGESPEDCQILITGTCGACGKGLPTDCCHOCACAGCTGPKHSDCLACLHNHSG 266
 QY 240 ICLHCPALVYNTDFESMNPGRVTPGACSCVTPACPNYLTVDVGSCTFLVCPLHNOEV 299
 DB 267 ICLHCPALVYNTDFESMNPGRVTPGACSCVTPACPNYLTVDVGSCTFLVCPLHNOEV 326
 QY 300 TABDGTQRCEKSKPCARVCYGLGMEHLREVRVTSANIQEFAGCKKIFGSLAFLESFD 359
 DB 327 TABDGTQRCEKSKPCARVCYGLGMEHLRGARITSDNVQEFQCKKIFGSLAFLESFD 386
 QY 360 GDPASNTAPLOPQLOVFEITGLYIYSANPDSLPLDSVFQNLQVIRGRILHNGAYS 419
 DB 387 GDPSSGIAPLRPQLOVFEITGLYIYSANPDSLPLDSVFQNLQVIRGRILHNGAYS 446
 QY 420 LTLQGLISWLGSLRSLGSLGLALHNNTHLCFVHTVPMQDLFRNPHQALLHTANRPED 479
 DB 447 LTLQGLISWLGSLRSLGSLGLALHNNTHLCFVHTVPMQDLFRNPHQALLHTANRPED 506
 QY 480 ECVGEGILACHQLCARGHCWGPPTQCVNCSQFLRGQECVCECRVLQGLPREYVNAHCLP 539
 DB 507 DCGLEGLVCSLCAHGHCWGPPTQCVNCSQFLRGQECVCECRVLQGLPREYVNAHCLP 566
 QY 540 CHPECPQNSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSYPMIWKFPDEGA 599
 DB 567 CHPECPQNSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSYPMIWKFPDEGI 626
 QY 600 CQPCPNCNTHSCVDLDDKGPAPQASPLTSIVSAGVILLVVLGVVFGILIKRQOKI 659
 DB 627 CQPCPNCNTHSCVDLDDKGPAPQASPLTSIVSAGVILLVVLGVVFGILIKRQOKI 686
 QY 660 RYKTMRLQETELVEPLTSGAMPNQAOQRILKTELKRVKVLGSAFVTVKGIWIPD 719
 DB 687 RYKTMRLQETELVEPLTSGAMPNQAOQRILKTELKRVKVLGSAFVTVKGIWIPD 746
 QY 720 GENVKIPVAIKVLRNTPSKANKEILDEAYVMAVGSPYVRLIGLICLTSTVQLVQLMP 779
 DB 747 GENVKIPVAIKVLRNTPSKANKEILDEAYVMAVGSPYVRLIGLICLTSTVQLVQLMP 806
 QY 780 YGCLLDHVRNRLGSLQDLNLCMOIAKMSVLEVLVRLDLAARNVLKSPNHVKIT 839
 DB 807 YGCLLDHVRNRLGSLQDLNLCMOIAKMSVLEVLVRLDLAARNVLKSPNHVKIT 866
 QY 840 DFLARLLDIDETEHADGKVPKIMWALESIILRRRTHQSDVMSYGVTVWELMTFGAKP 899
 DB 867 DFLARLLDIDETEHADGKVPKIMWALESIILRRRTHQSDVMSYGVTVWELMTFGAKP 926
 QY 900 YDGIPIAREIPDLLEKGRLLPOPICTIDVTVMVWKMWIDSECRPRELVSFERNARD 959
 DB 927 YDGIPIAREIPDLLEKGRLLPOPICTIDVTVMVWKMWIDSECRPRELVSFERNARD 986
 QY 960 PQRVFWIQLNEDLGPASPLDSTFYRSLEDDMDGLVDAEYLYPQOQFFCPDPAPGAGCM 1019
 DB 987 PQRVFWIQLNEDLGPASPLDSTFYRSLEDDMDGLVDAEYLYPQOQFFCPDPAPGAGCM 1046
 QY 1020 VHRHRSSTRSGGDDTLTGLESEEARPSPLAPSGAGSDVFDGLGMGAAGLQSLP 1079
 DB 1047 VHRHRSSTRSGGDDTLTGLESEEARPSPLAPSGAGSDVFDGLGMGAAGLQSLP 1106
 QY 1080 THDPSPLQRYSEDTPLPSETDGYVAPLTCSPQPEYVNPQVDRPQPPSPREGPLPAARP 1139
 DB 1107 PHDLSPLQRYSEDTPLPSETDGYVAPLTCSPQPEYVNPQVDRPQPPSPREGPLPAARP 1166
 QY 1140 AGATLERAKTLPCKNGVWVDVAFGAVENPEYLTQGGAAQPPHPPAFSPADNLYY 1199
 DB 1167 AGATLERAKTLPCKNGVWVDVAFGAVENPEYLTQGGAAQPPHPPAFSPADNLYY 1226
 QY 1200 WDQPPPERGAPPSTFKTPTTAENPEYLGLDVPV 1232

DB 1227 WDQNSSEQPPSPFEGTPTAENPEYLGLDVPV 1259
 RESULT 4
 Q6P732
 ID Q6P732 PRELIMINARY; PRT: 1259 AA.
 AC Q6P732;
 DT 05-JUL-2004 (T-EMBLrel. 27, Created)
 DT 05-JUL-2004 (T-EMBLrel. 27, Last sequence update)
 DT 05-JUL-2004 (T-EMBLrel. 27, Last annotation update)
 DE V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.
 GN Name=Erbb2;
 OS Rattus norvegicus (Rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
 OX NCBI_TaxID=101116;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Prostate;
 RX MEDLINE=22388257; PubMed=12477932;
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
 RA Klausner R.D., Collins F.S., Wagner K.H., Schaefer C.F., Bhat N.K.,
 RA Altschul S.F., Zedberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
 RA Diatchenko M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
 RA Brownstein M.J., Uedin T.B., Toshiyuki S., Carninci P., Prange C.,
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
 RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
 RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
 RA Fahey J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,
 RA Whitting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
 RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
 RA Krzywinski M.I., Skalska J., Smalls D.E., Schnerch A., Schein J.E.,
 RA Jones S.J., Marra M.A.;
 RT "Generation and initial analysis of more than 15,000 full-length human
 and mouse cDNA sequences.";
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
 RN [2]
 RP SEQUENCE FROM N.A.
 RC TISSUE=Prostate;
 RA Strausberg R.;
 RL Submitted (NOV-2003) to the EMBL/GenBank/DBJ databases.
 DR EMBL; BC061863; AAH61863.1; -;
 DR InterPro; IPR002048; EF-hand.
 DR InterPro; IPR000494; EGFR L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin repeat.
 DR InterPro; IPR009030; Growth factor.
 DR InterPro; IPR011009; Kinase-like.
 DR InterPro; IPR00719; Prot kinase.
 DR InterPro; IPR002290; Ser Thr kinase.
 DR InterPro; IPR001245; Tyr kinase.
 DR InterPro; IPR008266; Tyr kinase_AS.
 DR InterPro; IPR004019; YFP motif.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF00669; Kinase; 1.
 DR Pfam; PF01030; Recep_L domain; 2.
 DR Pfam; PF02757; YLP_2 domain; 1.
 DR PRINTS; PR00109; TYRKINASE.
 DR PRODOM; PD000001; Prot_kinase; 1.
 DR SMART; SM00261; FU; 4.
 DR SMART; SM00220; S_TK; 1.
 DR SMART; SM00219; TyrKc; 1.
 DR PROSITE; PS00018; EF HAND; UNKNOWN 1.
 DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
 DR PROSITE; PSS00011; PROTEIN_KINASE_DOM; 1.
 DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
 KW ATP-binding; Kinase; Transferase.
 SQ SEQUENCE 1259 AA; 139071 MW; 10746819C22BE802 CRC64;

QY	1020	VHHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEAGSDVFDGDLGWAAGKGLQSLP	1079
Db	1047	AHRRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEAGSDVFDGDLGWAAGKGLQSLP	1106
QY	1080	THDPSPLOQYSEDPTVPLPSETDGVVAPLTCSPQPEYVNVQPDVVRPQPPSPREGPLPAARP	1139
Db	1107	PHDLSPLOQYSEDPTVPLPSETDGVVAPLTCSPQPEYVNVQPDVVRPQPPSPREGPLPAARP	1166
QY	1140	AGATERAKTLSPGKXGVVQVAFAGAVENPEYLTPOGGAAPQPHPPPAFSPAFNLVY	1199
Db	1167	AGATERAKTLSPGKXGVVQVAFAGAVENPEYLTPOGGAAPQPHPPPAFSPAFNLVY	1226
QY	1200	WDQPPPERGAPPSTFKGTPTAENPEYLGIDVVP	1232
Db	1227	WDQNSSEQPPSPNFEGTPTAENPEYLGIDVVP	1259
RESULT 5			
ID	AAH61863	PRELIMINARY;	PRT; 1259 AA.
AC	AAH61863;		
DT	02-MAR-2004 (TREMBLrel. 27, Created)		
DT	02-MAR-2004 (TREMBLrel. 27, Last sequence update)		
DT	02-MAR-2004 (TREMBLrel. 27, Last annotation update)		
DE	V-erb-b2 erythroblastic leukemia viral oncogene homolog 2.		
OS	Rattus norvegicus (Rat).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		
OC	Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.		
OX	NCBI_TaxID=10116;		
RN	[1]		
RP	SEQUENCE FROM N.A.		
RC	TISSUE=Prostate;		
RX	MEDLINE=22388257; PubMed=12477932;		
RA	Klausner R.D., Feingold E.A., Grouse L.H., Derge J.G.,		
RA	Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,		
RA	Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,		
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,		
RA	Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,		
RA	Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,		
RA	Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,		
RA	Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,		
RA	Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,		
RA	Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,		
RA	Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,		
RA	Fahney J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,		
RA	Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,		
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,		
RA	Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,		
RA	Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,		
RA	Jones S.J., Marra M.A.;		
RT	"Generation and initial analysis of more than 15,000 full-length human		
RT	and mouse cDNA sequences."		
RL	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).		
RN	[2]		
RP	SEQUENCE FROM N.A.		
RC	TISSUE=Prostate;		
RA	Klausner R.;		
RL	Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.		
DR	EMBL; BC061863; AAH61863.1;		
SQ	SEQUENCE 1259 AA; 139071 MW; 10746819C22BE802 CRC64;		
Query Match 88.1%; Score 5895.5; DB 2; Length 1259;			
Best Local Similarity 87.9%; Pred. No. 1.3e-298;			
Matches 1084; Conservative 50; Mismatches 98; Indels 1; Gaps 1;			
QY	1	QVCTGTDMLKRLPASPEHLDMLRLHYLQGCQVQVQGNLELTYLPTNASLSFLQDIOBVOGY	60
Db	27	QVCTGTDMLKRLPASPEHLDMLRLHYLQGCQVQVQGNLELTYVPANASLSFLQDIOBVOGY	86
QY	61	VLIAHNQVQVPLQRLIRIVRGTLQFDENYALAVLDNGDPLNNTPTVT-GASPGGLRELQ	119
Db	87	MLIAHNQVQVPLQRLIRIVRGTLQFDENYALAVLDNRDPQDNVAASTPGRTPEGLRELQ	146
QY	120	RSLTEILKGGVLTQRPOLCYQDTILWKQIFHKNQOLALTLIDNRSRACHPCSPNCKGS	179
Db	147	RGLTEILKGGVLTQRPOLCYQDMVLWKQVFRKNNQOLAPVDIDNRSRACPPCAPACKDN	206
QY	180	RCWGESSEDCQSLTRVTCAGGACRCKGPLPTDCCHQCAGCTGPKHSDCLACLHFNHSG	239
Db	207	HCWGESPEDCQILGTICTSGCARCKGRUPTDCCHQCAGCTGPKHSDCLACLHFNHSG	266
QY	240	ICELHCPALVTYNTDTFESMNPPEGRTYFGASCVTACPNYLTSTDVGSCSTLCVPLHNQV	299
Db	267	ICELHCPALVTYNTDTFESMNPPEGRTYFGASCVTTCFYNLTSTEVGSCSTLCVPPNNQV	326
QY	300	TAEDEGTORCEKSKPCARVCYGLGMEHLREVRVAVTSANTQEPAGCKKIFGSLAFIPESD	359
Db	327	TAEDEGTORCEKSKPCARVCYGLGMEHLRGARAITSDNQEPDCKKIFGSLAFIPESD	386
QY	360	GPASNTAPLQPEOLQVFTLEITGYLYISAMPDLSLPDLVSFQNLQVIRGRILHNGAYS	419
Db	387	GPSSGIAPLRPOLQVFTLEITGYLYISAMPDLSLDLSVFNQNLRIIRGRILHNGAYS	446
QY	420	LTLQGLIGISGLRLSRLGSLALIHNTLHCFVHTVPWDQLFRNPHQALLHTANRPED	479
Db	447	LTLQGLIGISGLRLSRLGSLALIHNAHLHCFVHTVPWDQLFRNPHQALLHSGNRPEE	506
QY	480	ECVGEGLACHQICARGHCWPGTQCNCVCSQFLRGCEVCECRVLOGLPREYNARHCLP	539
Db	507	DCGLEGLVNSLCARHCWPGTQCNCVCSHFURGCEVCECRVWKGLEPREYVSDKRCILP	566
QY	540	CHPECQFQNGSVTCFPEADQCVACAHYKDPDPCVACRCPGKVPDLISYMPIWKFPDEGA	599
Db	567	CHPECQFQNSSETCFGSEADQCAACAHYKDSVCVACRCPGKVPDLISYMPIWKFPDEGI	626
QY	600	QCPCPINCHSCVDLDDKCPABQASPLTISVAVGILLVVLGVVGFGLIKRRQKI	659
Db	627	QCPCPINCHSCVDLDERGCPABQASPTFIATVVGVLFLFLVVGVLILIKRRQKI	686
QY	660	RKYTWRLLOETELVEPLTPSGAMPNQAWRIILKETELRKVKVLGSGAGFTVYKGIWIPD	719
Db	687	RKYTWRLLOETELVEPLTPSGAMPNQAWRIILKETELRKVKVLGSGAGFTVYKGIWIPD	746
QY	720	GENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLSTVQLVTQLMP	779
Db	747	GENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLSTVQLVTQLMP	806
QY	780	YGCLLDVHRENRGLSGDQLLNCWQIAKMSYLEDLVRLVHRDLAARNLVKSPNHVKIT	839
Db	807	YGCLLDVHRENRGLSGDQLLNCWQIAKMSYLEDLVRLVHRDLAARNLVKSPNHVKIT	866
QY	840	DFGLARLLDIDETEVHADGKVPKIKWMALESILRRBFTHQSDVWSYGVTVWELMTFGAKP	899
Db	867	DFGLARLLDIDETEVHADGKVPKIKWMALESILRRBFTHQSDVWSYGVTVWELMTFGAKP	926
QY	900	YDGIPAREIPDLLEKGERLPQPPICITIDVYIMVWKCMIDSECRPFRELVSEFSWARD	959
Db	927	YDGIPAREIPDLLEKGERLPQPPICITIDVYIMVWKCMIDSECRPFRELVSEFSWARD	986
QY	960	PORFVVIQNEGLGPASPLSTYFRSLLEDMDGLVDABEYLVPQOGFPDPAAGGM	1019
Db	987	PORFVVIQNEGLGPASPLSTYFRSLLEDMDGLVDABEYLVPQOGFPDPAAGGM	1046

DR	InterPro: IPR009030; Grow fac recept.	QY	61	VLIHNOVRVPLQRLIRIVRGTOIFEDNYALAVLDNGDPLNNTPTVT-GASPGGLRELQL	119
DR	InterPro: IPR011009; Kinase like.	Db	84	MLIAHNOVRVPLQRLIRIVRGTOIFEDNYALAVLDNRDPQDNVAASTPGTPTPEGLRELQL	143
DR	InterPro: IPR000719; Prot kinase.	QY	120	RSLTEILKGGVLIQORNPOLCYQDTILWKDIFHKKNQALALTLIDTNRSRACHPCSPMCKGS	179
DR	InterPro: IPR001245; Tyr_kinase_AS.	Db	144	RSLTEILKGGVLIQORNPOLCYQDVLWKDIFVRKNQALAPVDIDINRSRACPPCAPACKDN	203
DR	InterPro: IPR008266; Tyr_kinase.	QY	180	RCWGESSEDCOSLRTITVACGACARCKPLPTDCHEQCAAGCTGPKHSDCLACLFHNSG	239
DR	InterPro: IPR004019; YLP_motif.	Db	204	HCWGESPEDCQILGTITSGCARCKGRLPTDCHEQCAAGCTGPKHSDCLACLFHNSG	263
DR	Pfam: PF00757; Furin-like; 1.	QY	240	ICELHCPALVTYNTDTFESMENPEGRVTFGASCVTACPNVYLSLTDVGSCTLVCPHNOEV	299
DR	Pfam: PF02757; YLP_2_domain; 2.	Db	264	ICELHCPALVTYNTDTFESMENPEGRVTFGASCVTTCPNYLSLTVESGCTLVCPHNOEV	323
DR	PRINTS: PR00109; TYRKINASE.	QY	300	TAEQGTORCEKCKSPCARVCYGLGWEHLREVRVTSANIQEFACGCKIFGSLAFLPESFD	359
DR	PROSITE: PS00107; PROTEIN_KINASE_ATP; 1.	Db	324	TAEQGTORCEKCKSPCARVCYGLGWEHLRGARAITSDNVQDFDCKKIFGSLAFLPESFD	383
DR	PROSITE: PS50011; PROTEIN_KINASE_DOM; 1.	QY	360	GDPASNTAPLOPELOQVPETLEETIGLYISANPDSLPLDSVFQNLQVIRGRIILHNGYS	419
DR	PROSITE: PS00109; PROTEIN_KINASE_TYR; 1.	Db	384	GDPSSGIAPLRPELOQVPETLEETIGLYISANPDSLPLDSVFQNLRIIRGRIILHDGAYS	443
KW	3D-structure; ATP-binding; Disease mutation; Glycoprotein; Multigene family; Phosphorylation; Proto-oncogene; Receptor; Signal; Transferrase; Transmembrane; Tyrosine-protein kinase.	QY	420	LTLOGLGISWLGSLRLSGSLALIHHTHLCFVHTVPMDLPFRNHOALLHTANRPED	479
FT	SIGNAL 1 21	Db	444	LTLOGLGISWLGSLRLSGSLALIHHTHLCFVHTVPMDLPFRNHOALLHTANRPED	503
FT	CHAIN 22 1257	QY	480	E-CVGEGLACHQLCARGHCWGPGTQCNCVCSQFIRGQECVEECRVLOGLPREYNARHCL	538
FT	DOMAIN 22 654	Db	504	DLCVSSGLVCSLCAHGHGWCWGPGTQCNCVCSQFIRGQECVEECRVWKGKLPREYVSKRCL	563
FT	TRANSMEM 655 677	QY	539	PCHPEQONGSVTCFGEADQCAVACHYKDPFCVACRCPGSKVPDLSYMPIMKFPDEG	598
FT	DOMAIN 678 1257	Db	564	PCHPEQONGSVTCFGEADQCAVACHYKDPFCVACRCPGSKVPDLSYMPIMKFPDEG	623
FT	DOMAIN 159 369	QY	599	ACQPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLVGVVFGILIKRRQK	658
FT	DOMAIN 473 646	Db	624	ICQPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLVGVVFGILIKRRQK	683
FT	DOMAIN 722 989	QY	659	IRKTYMRRLLOETELVEPLTPSGAMPNQAOMRILKETELRKVKVLSGAFGVYKGIWIP	718
FT	NP_BIND 728 736	Db	684	IRKTYMRRLLOETELVEPLTPSGAMPNQAOMRILKETELRKVKVLSGAFGVYKGIWIP	743
FT	BINDING 755 755	QY	719	DGENVKIPIVAIKVLRNTSPKANKELDEAYMAGVSPYVSRLLGICLTSTVQLVLTQM	778
FT	ACT_SITE 847 847	Db	744	DGENVKIPIVAIKVLRNTSPKANKELDEAYMAGVSPYVSRLLGICLTSTVQLVLTQM	803
FT	DISULFID 196 205	QY	779	PYGCLLDHVRENRRGLSGQDLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHVKI	838
FT	DISULFID 200 213	Db	804	PYGCLLDHVRENRRGLSGQDLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHVKI	863
FT	DISULFID 221 228	QY	839	TFPGLARLLDIDETEHADGGKVPKKNWALESIILRRFTHOSDVMSYGVTVWELMTFGAK	898
FT	DISULFID 225 236	Db	864	TFPGLARLLDIDETEHADGGKVPKKNWALESIILRRFTHOSDVMSYGVTVWELMTFGAK	923
FT	DISULFID 237 245	QY	899	PDGIPAREIPDLLEKGERLPPOPICTIDVYMWKWMIDSECRPRFRELYSEFSRMAR	958
FT	DISULFID 241 253	Db	924	PDGIPAREIPDLLEKGERLPPOPICTIDVYMWKWMIDSECRPRFRELYSEFSRMAR	983
FT	DISULFID 256 265	QY	959	DPQRFVVIQNEIDLGPASPMDSTFYRSLLEDMDGDLVDAEYLVYVQQGFCDPPAPGAGG	1018
FT	DISULFID 269 296	Db	984	DPQRFVVIQNEIDLGPASPMDSTFYRSLLEDMDGDLVDAEYLVYVQQGFCDPPAPGAGG	1043
FT	DISULFID 300 312	QY	1019	MVHRRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVDFDGLMGAAKGLQSL	1078
FT	DISULFID 316 332	Db	1044	TAHRRRSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVDFDGLMGAAKGLQSL	1103
FT	DISULFID 335 339	QY	1079	PTHDPSPLOKRSDFTVPLPSETDGYVAPLTCSQPEYVNPDPVRPQPPSPREGPLPAAR	1138
FT	DISULFID 353 359	Db	1104	SPHLSPLQKRSDFTVPLPSETDGYVAPLTCSQPEYVNPDPVRPQPPSPREGPLPAAR	1163
FT	DISULFID 569 586	QY	1139	PAGATLERAKTLSPGKNGVVKVVPFAGGAVENPEYLTPOGGAAPQHPHPAPSPADNLY	1198
FT	DISULFID 589 598	Db			
FT	DISULFID 602 625				
FT	DISULFID 628 636				
FT	DISULFID 632 644				
FT	MOD_RES 1141 1141				
FT	MOD_RES 1250 1250				
FT	CARBOHYD 68 68				
FT	CARBOHYD 188 188				
FT	CARBOHYD 260 260				
FT	CARBOHYD 532 532				
FT	CARBOHYD 573 573				
FT	CARBOHYD 631 631				
FT	CARBOHYD 661 661				
SQ	SEQUENCE 1257 AA; 138831 MW; 6129264583011402 CRC64;				
Query Match					
Best Local Similarity 88.1%; Score 5895; DB 1; Length 1257;					
Matches 1085; Conservativity 87.9%; Pred. No. 1.3e-298;					
Matches 1085; Conservativity 50; Mismatches 97; Indels 2; Gaps 2;					
QY	1 QVCTGDMKRLPASFPETHLDMRLHYQGCQVQGNLETLVLPNVLASFLQDIOEVQGY 60				
Db	24 QVCTGDMKRLPASFPETHLDMRLHYQGCQVQGNLETLVLPNVLASFLQDIOEVQGY 83				


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||||| 1164 PAGATLRRPKTSPKQGVKVDVFAFGGAVENPEYLVPRGTAAPPHPSPAFPAFONLY 1223
Db
||||| 1199 YWQDDPERRGAPPTFKGTPTAENPEYVLGLDVPV 1232
Qy
||||| 1224 YWQNSSEGGPPSPFSGTPTAENPEYVLGLDVPV 1257
Db

RESULT 7
ERB2 MESAU
ID_ERB2 MESAU STANDARD; PRT; 1254 AA.
AC Q60553;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Receptor protein-tyrosine kinase erbB-2 precursor (EC 2.7.1.112)
DE (p185erbB2) (NEU proto-oncogene) (C-erbB-2).
GN Name=ERB2; Synonyms=NEU;
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus
NCBI_TaxID=10036;
OX [1]
RN SEQUENCE FROM N.A.
RP TISSUE=Nerve;
RC MEDLINE=94193007; PubMed=7908275;
RA Nakamura T.; Ushijima T.; Ishizaka Y.; Nagao M.; Arai M.; Yamazaki Y.,
RT "Cloning and activation of the Syrian hamster neu proto-oncogene.";
RL Gene 140:251-255(1994).
CC -!- FUNCTION: Essential component of a neurotrophin receptor complex,
CC although neurotrophins do not interact with it alone. GRB3 is a
CC potential ligand for this receptor. Not activated by EGF, TGF-
CC alpha and amphiregulin (By similarity).
CC -!- CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
CC tyrosine phosphate.
CC -!- SUBUNIT: Heterodimer with each of the other ERBB receptors
CC (Potential). Interacts with PRKCA/BP (By similarity).
CC -!- SUBCELLULAR LOCATION: Type I membrane protein.
CC -!- PTM: Ligand-binding increases phosphorylation on tyrosine
CC residues.
CC -!- SIMILARITY: Belongs to the EGF receptor family.
CC
CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC or send an email to license@isb-sib.ch).
CC
CC EMBL; D16295; BAA03801.1; ..
CC PIR; I48161; I48161.
CC HSPSP; P06494; IN8Y.
CC DR InterPro: IPR000494; EGFR_L.
CC DR InterPro: IPR006211; Furin-like.
CC DR InterPro: IPR008212; Furin repeat.
CC DR InterPro: IPR009030; Grow_fac_recept.
CC DR InterPro: IPR011009; Kinase like.
CC DR InterPro: IPR000719; Prot_kinase.
CC DR InterPro: IPR001245; Tyr_kinase.
CC DR InterPro: IPR008266; Tyr_kinase_AS.
CC DR Pfam; PF00757; Furin-like; 1.
CC DR Pfam; PF00069; Kinase; 1.
CC DR Pfam; PF01030; Recep_L_domain; 2.
CC DR PRINTS; PR00109; TYRKINASE
CC DR ProDom; PD000001; Prot_kinase; 1.
CC DR SMART; SM00261; FU; 4.
CC DR SMART; SM00219; TYRKC; 1.
CC DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

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DR PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Disease mutation; Glycoprotein; Multigene family;
KW Phosphorylation; Proto-oncogene; Receptor; Signal; Transferase;
KW Transmembrane; Tyrosine-protein kinase.
KW SIGNAL 1 21 Potential.
FT CHAIN 22 1254 Receptor protein-tyrosine kinase erbB-2.
FT DOMAIN 22 652 Extracellular (Potential).
FT TRANSMEM 653 675 Potential.
FT DOMAIN 676 1254 Cytoplasmic (Potential).
FT DOMAIN 158 368 Cys-rich.
FT DOMAIN 472 644 Cys-rich.
FT DOMAIN 720 987 Protein kinase.
FT NP_BIND 726 734 ATP (By similarity).
FT BINDING 753 753 ATP (By similarity).
FT ACT_SITE 845 845 By similarity.
FT DISULFID 195 204 By similarity.
FT DISULFID 199 212 By similarity.
FT DISULFID 236 244 By similarity.
FT DISULFID 240 252 By similarity.
FT DISULFID 255 264 By similarity.
FT DISULFID 268 295 By similarity.
FT DISULFID 299 311 By similarity.
FT DISULFID 315 331 By similarity.
FT DISULFID 334 338 By similarity.
FT DISULFID 511 520 By similarity.
FT DISULFID 515 528 By similarity.
FT DISULFID 531 540 By similarity.
FT DISULFID 544 560 By similarity.
FT DISULFID 563 576 By similarity.
FT DISULFID 567 584 By similarity.
FT DISULFID 587 596 By similarity.
FT DISULFID 600 623 By similarity.
FT DISULFID 626 634 By similarity.
FT DISULFID 630 642 By similarity.
FT MOD_RES 1139 1139 Phosphotyrosine (by autocatalysis) (By
FT similarity).
FT MOD_RES 1247 1247 Phosphotyrosine (by autocatalysis) (By
FT similarity).
FT CARBOHYD 68 68 N-linked (GlcNAc... ) (Potential).
FT CARBOHYD 125 125 N-linked (GlcNAc... ) (Potential).
FT CARBOHYD 187 187 N-linked (GlcNAc... ) (Potential).
FT CARBOHYD 259 259 N-linked (GlcNAc... ) (Potential).
FT CARBOHYD 530 530 N-linked (GlcNAc... ) (Potential).
FT CARBOHYD 571 571 N-linked (GlcNAc... ) (Potential).
FT CARBOHYD 629 629 N-linked (GlcNAc... ) (Potential).
FT VARIANT 658 658 V -> E (in oncogenic NEU).
FT VARIANT 659 659 V -> E (in oncogenic NEU).
SQ SEQUENCE 1254 AA; 138252 MW; 974C3791C21F2BE1 CRC64;

Query Match 88.1%; Score 5894.5; DB 1; Length 1254;
Best Local Similarity 87.7%; Pred. No. 1.4e-298;
Matches 1081; Conservative 57; Mismatches 93; Indels 1; Gaps 1;

Qy 1 QVCTGTDMLKRLPASPEHLDMLRHLYQGCVVQGNLELTYPNANSLSLFLQDIQEVQY 60
Db 24 QVCTGTDMLKRLPASPEHLDIVRHLYQGCVVQGNLELTYPANATLSFLQDIQEVQY 83
Qy 61 VLIAHQVQVPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
Db 84 MLTIAHQVVRHVPQLRLIRVRGTQLFEDQYALAVLDNRDPLDNTVTATGRTPEGLRELQLR 143
Qy 121 SLTEILKGGVLIQNPQLCYQDTILWKDIFHKKNQLALTLDNRSRACPCPCMKGSR 180
Db 144 SLTEILKGGVLIIRGNPOLCYQDTVLWKDVRKNQLAPVDIDNRSRACPCPCACKDNH 203
Qy 181 CWGESSEDCQSLTRITVCAGGRCARCKGPLPTDCCHECCAGCTGPKISDCLACLFHNSGI 240
Db 204 CWGASPEDCQTLTGTTAPRAVPARARLPTDCCHECCAGCTGPKISDCLACLFHNSGI 263
Qy 241 CELHCPALVTYNTDTFTESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTLVCPLNQEV 300
Db 264 CELHCPALVTYNTDTFTESMPNPEGRYTFGASCVTTCPYNYLSTEVSGCTLVCPLNQEV 323

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QY 301 AEDGTQCEKCKSPCARVCYGLQWHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 360
DB 324 AEDGTQCEKCKSKCARVCYGLQWHLRGARAITSANIQEFAGCKKIFGSLAFLPESFDG 383
QY 361 DPASNTAPLOPELOVFTLEETITGVLYTSAMPDSLPLDVSFONQLOVIEGRILHNGAYSL 420
DB 384 NPSSGIAPTPEQLQVFTLEETITGVLYTSAMPDSLPLDVSFONQLOVIEGRILHNGAYSL 443
QY 421 TLQGLGISLWGLSLRELASGLALIHNNTHLCFVHTVPWDQLFRNPHQALLHTANPEDE 480
DB 444 ALQGLGIRLWGLSLRELASGLVLIHRNTHLCFVHTVPWDQLFRNPHQALLHSGNPSERE 503
QY 481 CVGEGLACHOLCARGHCWGPGPTQCNCVQFLRGQCBECRVQLGLPREYNARHCLPC 540
DB 504 CGLKAFACYPLCARGHCWGPGPTQCNCVSHFLRGQCBECRVKWLGLPREYVNGKHCPC 563
QY 541 HPSCQPNQSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSYMPITWFFPDEEGAC 600
DB 564 HPSCQPNQSVTCFGEADQCVACAHYKDPFPCVACPSGVKPDLSYMPITWFFPDEEGAC 623
QY 601 QPCPINCTHSCVDLDDKGCPEAQASPLTSIVSAVVGILLVWVVGVLGKILKRRQKIR 660
DB 624 QPCPINCTHSCVDLDDKGCPEAQASPLTSIVSAVVGILLVWVVGVLGKILKRRQKIR 683
QY 661 KYTWRRLLQETELVEPLTPSGAMPNQAMRILKTELKVKVLGSGAFGVYKGIWIPDG 720
DB 684 KYTWRRLLQETELVEPLTPSGAMPNQAMRILKTELKVKVLGSGAFGVYKGIWIPDG 743
QY 721 ENVKIPVAIKVLRNTSPKANKIILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQLMY 780
DB 744 ENVKIPVAIKVLRNTSPKANKIILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQLMY 803
QY 781 GCLLDHVRENRGLSGDNLNWCQIAKMSYLEDVRLVHRDLAARNVLKSPNHVKITD 840
DB 804 GCLLDHVRENRGLSGDNLNWCQIAKMSYLEDVRLVHRDLAARNVLKSPNHVKITD 863
QY 841 FGLARLLDIDETEYHADGGKVPKWALESILRRRTHQSDVMSYGVYTWELMTFGAKPY 900
DB 864 FGLARLLDIDETEYHADGGKVPKWALESILRRRTHQSDVMSYGVYTWELMTFGAKPY 923
QY 901 DGIPAREIPDLLEKGERLPPOPICTIDVIMVWKWMDISECRPRFRELVSERFARMARDP 960
DB 924 DGIPAREIPDLLEKGERLPPOPICTIDVIMVWKWMDISECRPRFRELVSERFARMARDP 983
QY 961 QRFVVIQNEIDLGASPLDSTFYRSLLDDDDMDGLVDAEYLVLPQQGFFCPDPAPGAGMW 1020
DB 984 QRFVVIQNEIDLGASPLDSTFYRSLLDDDDMDGLVDAEYLVLPQQGFFCPDPAPGAGMW 1043
QY 1021 HRRHRSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGLGMGAAGLQSLPT 1080
DB 1044 HRRHRSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGLGMGAAGLQSLPT 1103
QY 1081 HDFSPLQRYSEDPTVPLPSETDGTVAPLTCSPOFEYVNPQDVRPQPPSPREGPLPAARPA 1140
DB 1104 RDLSPQLQRYSEDPTVPLPSETDGTVAPLTCSPOFEYVNPQDVRPQPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTLPSPGNKGVVQVAFPGGAVENPEVLTPOGGAAPHPHPPAPSPAFDNLVYV 1200
DB 1164 GATLERAKTLPSPGNKGVVQVAFPGGAVENPEVLTPOGGAAPHPHPPAPSPAFDNLVYV 1222
QY 1201 DQDPPERGAPSTPKGPTAENPEYLGLDVVP 1232
DB 1223 DQDPPERGAPSTPKGPTAENPEYLGLDVVP 1254
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RESULT 8

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Q6ZPEO PRELIMINARY; PRT; 1305 AA.
AC Q6ZPEO, 2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
```

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DE MKIAA3023 protein (Fragment).
GN Name=mkIAA3023;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Embryonic tail;
RX PubMed=14621295;
RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Koseki H., Hiraoka S.,
RA Saga Y., Nagase T., Ohara O., Koga H.;
RT "Prediction of the coding sequences of mouse homologues of KIAA gene:
RT III. the complete nucleotide sequences of 500 mouse KIAA-homologous
RT cDNAs identified by screening of terminal sequences of cDNA clones
RT randomly sampled from size-fractionated libraries."
RL DNA Res. 10:167-180(2003).
DR EMBL; AK129487; BAC98297.1;
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin_repeat.
DR InterPro; IPR006212; Furin_repeat.
DR InterPro; IPR009030; Growth_factor_receptor.
DR InterPro; IPR011009; Kinase_like.
DR InterPro; IPR000719; Protein_kinase.
DR InterPro; IPR002290; Serine_threonine_kinase.
DR InterPro; IPR001245; Tyrosine_kinase.
DR InterPro; IPR008266; Tyrosine_kinase_AS.
DR InterPro; IPR004019; YLP_motif.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF00669; Kinase; 1.
DR Pfam; PF01030; Receptor_L_domain; 2.
DR Pfam; PF02757; YLP; 2.
DR PRINTS; PR00109; TYRKINASE.
DR ProDom; PD000001; Protein_kinase; 1.
DR SMART; SM00261; FU; 4.
DR SMART; SM00220; S_TKc; 1.
DR SMART; SM00219; TyKc; 1.
DR PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.
DR PROSITE; PS00011; PROTEIN_KINASE_DOM; 1.
DR PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.
KW ATP-binding; Kinase; Transferase.
FT NON_TER 1
SQ SEQUENCE 1305 AA; 143507 MW; A51D897408521860 CRC64;

Query Match 87.8%; Score 5877.5; DB 2; Length 1305;
Best Local Similarity 87.6%; Pred. No. 1.1e-297;
Matches 1080; Conservative 56; Mismatches 96; Indels 1; Gaps 1;

QY 1 QVCTGTGDMKRLIPASPETHLDMLRHYQGCQVVGQNLLEYLTPTWASLSFLQDIOBVOQY 60
DB 73 QVCTGTGDMKRLIPASPETHLDMLRHYQGCQVVGQNLLEYLTPTWASLSFLQDIOBVOQY 132
QY 61 VLIAHNOVQVPLQRLIRIVRGTLQPEDNYALVLDNGDPLNN-TTPVTGASPGGLRELQL 119
DB 133 MLIAHNRVXHPVPLQRLIRIVRGTLQPEDKXALVLDNRDPLDNTVTAAPGRTPEGLRELQL 192
QY 120 RSLTEILKGGVLIQRNPQLCYQDTILWKDIFHNHQLALTIDTNRSRACHPCSPMCKGS 179
DB 193 RSLTEILKGGVLIQRNPQLCYQDMVLWKDLKNNQLAPVDMDTNRSRACHPCSPMCKGS 252
QY 180 RCWGESSEDCOSLTRVTCAGGCARCKGLPTCCCHCCOAGCTGPKHSDCLACLHFNHSG 239
DB 253 HCWGESPEDCQILGTGTCISGCAKCKGRPLTCCCHCCOAGCTGPKHSDCLACLHFNHSG 312
QY 240 ICELHCPALVTYNTDTFFESMPNPEGRYTFGASCVTACPNYILSTDVGSCTLVCPLNQEV 299
DB 313 ICELHCPALVTYNTDTFFESMLNPEGRYTFGASCVTTCPNYILSTEVGSCTLVCPNNQEV 372
QY 300 TADGTQCEKCKSPCARVCYGLQWHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFD 359
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Db 373 TAEDGTORCEKCKSPKAGVYGLGMEHLRGARAITSDNIQBFACKKIFGSLAFPLPSFD 432
Qy 360 GDPASNTAPLOQLOVFPETLEEITGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYS 419
Db 433 GNPSSGVAPLKEHLQVFPETLEEITGYLYISAWPESFDLSVFQNLVIRGRILHNGAYS 492
Qy 420 LTQGLGISWGLSLRSLRELGLALIHNTLHLCFVHTVPMQDLPRNPHQALLHTANRPED 479
Db 493 LTQGLGIHSLGRSLRELGLALIHNTLHLCFVHTVPMQDLPRNPHQALLHSGNRPEE 552
Qy 480 ECVGEGLACHQLCARGHCGPGPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNRHCLP 539
Db 553 ACGLGLVGNLSLARGHCGPGPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNRHCLP 612
Qy 540 CHPECPQNGSVTCFGEADQCVACAHYKDPFPCVACPCSPKPDLSYMPIMKFPDDEGA 599
Db 613 CHPECPQNSSETCYGSEADQCEACAHYKSSSCVACPCSPKPDLSYMPIMKFPDDEGI 672
Qy 600 CQPCPINCTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRROKI 659
Db 673 CQPCPINCTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRROKI 732
Qy 660 RYKTMERLLQETELVEPLTPSGAMPNQAQRILKTELKRVKVLGSGAFGVYKGIWIPD 719
Db 733 RYKTMERLLQETELVEPLTPSGAMPNQAQRILKTELKRVKVLGSGAFGVYKGIWIPD 792
Qy 720 GENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 779
Db 793 GENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 852
Qy 780 YGCLLDHVRNHRGLSGODLLNWCQIAKMSYLEVRLVHRDLAARNVLKSPNHVKIT 839
Db 853 YGCLLDHVRNHRGLSGODLLNWCQIAKMSYLEVRLVHRDLAARNVLKSPNHVKIT 912
Qy 840 DFGILARLLDIDETEHADGGKVPKMWALRESILRRTHQSDVWSYGVTVWELMTFGAKP 899
Db 913 DFGILARLLDIDETEHADGGKVPKMWALRESILRRTHQSDVWSYGVTVWELMTFGAKP 972
Qy 900 YDGIIPAREIPDLLEKGBRLPOPICTIDVYIMVWKMWIDSECRPRELVSFBSRWARD 959
Db 973 YDGIIPAREIPDLLEKGBRLPOPICTIDVYIMVWKMWIDSECRPRELVSFBSRWARD 1032
Qy 960 PORFVWIONEDLGPASPLDSTFYRSLLEDMDGLVDAEYLVPOQGFPCDPAPGAGGM 1019
Db 1033 PORFVWIONEDLGPSPMDSTFYRSLLEDMDGLVDAEYLVPOQGFPCDPAPGAGGM 1092
Qy 1020 VHRHRSSTFSGGCDITGLPSEEEAPRSLAPSEGAGSDVFDGLGMAKGLQSLP 1079
Db 1093 AHRHRSSTFSGGCDITGLPSEEEAPRSLAPSEGAGSDVFDGLGMAKGLQSLP 1152
Qy 1080 THDPSPLQRYSEDPTVLPSETDGYVAPLTCSPQPEYVNOVDVVRQPPSPREGLPAARP 1139
Db 1153 PHDLSPLQRYSEDPTVLPSETDGYVAPLTCSPQPEYVNOVDVVRQPPSPREGLPAARP 1212
Qy 1140 AGATLERAKTLPKNGKGVKDVFAFGGAVENPEYLTPOGGAAPQHPPPPAPFONLXY 1199
Db 1213 AGATLERAKTLPKNGKGVKDVFAFGGAVENPEYLTPOGGAAPQHPPPPAPFONLXY 1272
Qy 1200 WDQPPPRGAPPSTFKGTPTAENPEYLGLDVVP 1232
Db 1273 WDQNSSEQPPPTFEGTPTAENPEYLGLDVVP 1305

RESULT 9

BAC98297 PRELIMINARY; PRT; 1305 AA.
AC BAC98297;
DT 02-MAR-2004 (TrEMBLrel. 27, Created)
DT 02-MAR-2004 (TrEMBLrel. 27, Last sequence update)
DT 02-MAR-2004 (TrEMBLrel. 27, Last annotation update)
DE MKIAA3023 protein (fragment).
GN MKIAA3023.
OS Mus musculus (Mouse).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
RN NCBI_TaxID=10090;
RP SEQUENCE FROM N.A.
RC TISSUE=Embryonic tail;
RA Okazaki N., Kikuno R., Ohara R., Inamoto S., Koseki H., Hiraoka S.,
Saga Y., Nagase T., Ohara O., Koga H.;
"Prediction of the Coding Sequences of Mouse Homologues of KIA Gene:
III. The Complete Nucleotide Sequences of 500 Mouse KIAA-homologous
cDNAs Identified by Screening of Terminal Sequences of cDNA Clones
Randomly Sampled from Size-fractionated Libraries.";
RT DNA Res. 10:167-180(2003).
DR EMBL; AK129487; BAC98297.1; -.
FT NON TER 1
SQ SEQUENCE 1305 AA; 143507 MW; A51D897408521860 CRC64;

Query Match 87.8%; Score 5877.5; DB 2; Length 1305;
Best Local Similarity 87.6%; Pred. No. 1.1e-297;
Matches 1080; Conservative 56; Mismatches 96; Indels 1; Gaps 1;

Qy 1 QVCTGTDMLRLPASPTHLDMLRHLVYQGVVQGNLELTYPNLSLFLQDIQEVQY 60
Db 73 QVCTGTDMLRLPASPTHLDMLRHLVYQGVVQGNLELTYPNLSLFLQDIQEVQY 132
Qy 61 VLIAHNOVROVPLQRLRIVRGTOLEFEDNYALAVLDNGDPLNN-TTPVTGASPGGLRELQ 119
Db 133 MLIAHNRVHVPLQRLRIVRGTOLEFEDNYALAVLDNRDPLDNVTTAAGTPEGLRELQ 192
Qy 120 RSUTEILKGVSLIQRNPOLCYQDTILWKQIFHXNQALALTLIDNRSRACHPCSPMCKGS 179
Db 193 RSLUTEILKGVSLIQRNPOLCYQDMVLWKQVLRKNNQLAPVDMDNRSRACHPCAPTCKDN 252
Qy 180 RCWGESSEDCOSLITRVYAGGACRCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSG 239
Db 253 HCWGESPEDCQILITGCTGSCARCKGRPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSG 312
Qy 240 ICELHCPALVYNTDTFESMPNPEGRTYFGASCVTACPYNYLSTDVGSCTLVCPHNOEV 299
Db 313 ICELHCPALVYNTDTFESMLNPEGRTYFGASCVTTCPYNYLSTEVGSCTLVCPHNOEV 372
Qy 300 TABDGTQRCCKSKPCARVYCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFPLPSFD 359
Db 373 TABDGTQRCCKSKPCAGVCYGLGMEHLRGARAITSDNIQEFAGCKKIFGSLAFPLPSFD 432
Qy 360 GDPASNTAPLOQLOVFPETLEEITGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYS 419
Db 433 GNPSSGVAPLKEHLQVFPETLEEITGYLYISAWPESFDLSVFQNLVIRGRILHNGAYS 492
Qy 420 LTQGLGISWGLSLRSLRELGLALIHNTLHLCFVHTVPMQDLPRNPHQALLHTANRPED 479
Db 493 LTQGLGIHSLGRSLRELGLALIHNTLHLCFVHTVPMQDLPRNPHQALLHSGNRPEE 552
Qy 480 ECVGEGLACHQLCARGHCGPGPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNRHCLP 539
Db 553 ACGLGLVGNLSLARGHCGPGPTQCVNCSQFLRGQECVBECEVRLQGLPREYVNRHCLP 612
Qy 540 CHPECPQNGSVTCFGEADQCVACAHYKDPFPCVACPCSPKPDLSYMPIMKFPDDEGA 599
Db 613 CHPECPQNSSETCYGSEADQCEACAHYKSSSCVACPCSPKPDLSYMPIMKFPDDEGI 672
Qy 600 CQPCPINCTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRROKI 659
Db 673 CQPCPINCTHSCVDLDDKGCAPORASPLTSIVSAVVGILLVVLGVVFGILIKRROKI 732
Qy 660 RYKTMERLLQETELVEPLTPSGAMPNQAQRILKTELKRVKVLGSGAFGVYKGIWIPD 719
Db 733 RYKTMERLLQETELVEPLTPSGAMPNQAQRILKTELKRVKVLGSGAFGVYKGIWIPD 792
Qy 720 GENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 779
Db 793 GENVKIPVAIKVIRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVQLVTQIMP 852

QY 239 GICELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPVNYLSTDVSGCTLVCPLNQ 298
Db 258 ATCDTCTPPMLNFTTYQMDVNPBGKYSFGATCVKCKPRNYVVTTHGSCVRACGPDY 317
QY 299 VTAEDGTQRCCKSKFCARCYCYGLGMEHREVAITSANIQEPAGCKIFGSLAFPE 358
Db 318 V-BEDGVSKCKCDGPKVCNGIGIGEFKDTLSINATNIKFKYCTAISGDLHILPVAF 376
QY 359 DGPASNTAPLQEQLOVFTLEITGTYLISAWPDSLPDLVSFQNLQVIRGILNGAY 418
Db 377 KGDSFTRTPDLPRELEILTKVKEITGFLLIQWPNWTDLHAFENLEIRTKQGO 436
QY 419 SLTQGLGSLWGLRSLRELGSGLALIHNTLHCFVHTVPWDLFRNPHQALLHTANR 478
Db 437 SLAVGUNTSLGRSLKSLSDGDIISGNRNLCYANTINWKLFGTPNQTKIMNRAE 496
QY 479 DECVEGLACHQICARGHGPQPTQVNCQSLRQCEVCEKVLQGLPREYVYVNAHCL 538
Db 497 KDCCKATNVNCPCLSGSEGCWGPEPTDCVSCQVNSRGRECVDKCNILEGEPRFVENSE 556
QY 539 PCHPEQOPQNGSVTCFGEPAQCVACAHYKDPFCVAPCPGSKVPLDLSWPIWKPDP 598
Db 557 QCHPECLPQMTNITGCRGPDNCKCAHYVDGPHCVKTCFPGIMGENNTL-VMKFADANN 615
QY 599 ACQPCPINCSTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVLGVVFGI-LIKR 656
Db 616 VCHLCHANCTYGCAGLKGK--QQEGFKIPSIATIGVGLLFIVV-VALGIGLFMR 672
QY 657 QKIRKYMRLLOETELVPLTPSGAMPQAQMRILKETELRKVKVLGSAFGTVYKGIW 716
Db 673 QLVKRTLRLLQERELVPLTPSGEAPNQAHLRIKTEFKKIVLGSAGFTVYKGLW 732
QY 717 IPDGENKVPVAKVIRENTSPKANKEILDEAVMAGVSGSPYVRLGLICLSTVOLTV 776
Db 733 IPEGEKVPVAKVIRENTSPKANKEILDEAVMAGVSGSPYVRLGLICLSTVOLTV 792
QY 777 LMPYGLLDHVRNCRGLASODLNNCMQIAKMSYLEDVRLVHRLDAAARNVLVKS 836
Db 793 LMPYGLLDHVRNCRGLASODLNNCMQIAKMSYLEDVRLVHRLDAAARNVLVKS 852
QY 837 KITDFGLARLLDIDETEHADGGKVPKWALESILRRERFTHQSDVMSYGVTVWELMT 896
Db 853 KITDFGLARLLDIDETEHADGGKVPKWALESILRRERFTHQSDVMSYGVTVWELMT 912
QY 897 AKYDGPABEIPDLEKGERLPPOPICITIDVYMWKCMIDSECRPRELVSFERSM 956
Db 913 SKPYDGPABEIPDLEKGERLPPOPICITIDVYMWKCMIDSECRPRELVSFERSM 972
QY 957 ARDPQRFVVIQ-NEDLGPASPLDSTFVRSILLEDDMDGLVDABEYLVPOGGPCPDPA 1015
Db 973 ARDPQRFVVIQ-NEDLGPASPLDSTFVRSILLEDDMDGLVDABEYLVPOGGPCPDPA 1025
QY 1016 AGMVHHRHSRSTGGGDLTLGLPESEAPRSLAPSEAGSDVDFDGLMGAAKGL 1075
Db 1026 -----NSPST-----SRTPLLSLSANSN-----SSTVACINRN 1054
QY 1076 QSLPHTDPPELQYSEDPVPLPSET--DGYVAPLTCSPQPEYVNGPDVRQPPSPREG 1133
Db 1055 GSCRVKEDAPLQYSEDPVPLPSET--DGYVAPLTCSPQPEYVNGPDVRQPPSPREG 1107
QY 1134 LPAARAGATLERAKTSLPKNGKWDVAFAGAVENPEYL-TPOGGAAPQHPPPAFSP 1192
Db 1108 VYHNQPLHP-----AFGRDLHYQN--PHSNVSNPEYLVNTAQ-----PTCL 1148
QY 1193 AFONLYWYDQ-----DP-----PERGAPPSTFKGTPTAENPEYLG 1231
Db 1149 GFDSSALWIKQSHQMSLDNPDYQQDFFPKAEKENGIFKG-PTAENAEYLRVAPP 1202

RESULT 12

Q80Y89

ID Q80Y89

AC Q80Y89;

PRELIMINARY; PRT; 711 AA.

DT 01-JUN-2003 (TREMELrel. 24, Created)
DT 01-JUN-2003 (TREMELrel. 24, Last sequence update)
DT 05-JUL-2004 (TREMELrel. 27, Last annotation update)
DE Erbb2 protein.
GN Name=Erbb2;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RX MEDLINE=22388257; PubMed=1247932;
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G., Schuler G.D.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schaefer C.F., Bhat N.K.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diachenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.P., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Udwin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalón D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettner M., Madan A., Rodriguez S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakeley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Guichard J., Schmitz J., Myers R.M., Butterfield Y.S.,
RA Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA Jones S.J., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (FEB-2003) to the EMBL/GenBank/DBJ databases.
RN [3]
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6; TISSUE=Brain;
RA Strausberg R.;
RL Submitted (JUN-2003) to the EMBL/GenBank/DBJ databases.
DR EMBL; BC046811; AH46811.1; --
DR EMBL; BC053078; AAH53078.1; --
DR HSSP; P06494; 1N8Y.
DR MGD; MGI:95410; Erbb2.
DR GO; GO:0007507; P:heart development; IMP.
DR GO; GO:0042552; P:myelination; IMP.
DR GO; GO:0007422; P:peripheral nervous system development; IMP.
DR InterPro; IPR000494; EGFR_L.
DR InterPro; IPR006211; Furin-like.
DR InterPro; IPR006212; Furin repeat.
DR InterPro; IPR009030; Growth factor receptor.
DR Pfam; PF00757; Furin-like; 1.
DR Pfam; PF01030; Receptor domain; 2.
DR SMART; SM00261; FU; 4.
SQ SEQUENCE 711 AA; 78707 MW; 682B188EB0E71318 CRC64;
Query Match 47.2%; Score 3159.5; DB 2; Length 711;
Best Local Similarity 84.4%; Pred. No. 21e-156;
Matches 569; Conservative 41; Mismatches 63; Indels 1; Gaps 1;
QY 1 QVCTGTDMKRLPASPETHDMLRHLGYGQCVVQGNLELYLPTNASLFLQDIQEVQY 60
Db 24 QVCTGTDMKRLPASPETHDMLRHLGYGQCVVQGNLELYLPTNASLFLQDIQEVQY 83
QY 61 VLIHANNVQVPLQRLIRVRGTQLPEDNVALAVLNGPLNN-TTPVTGASPGGLREL 119
Db 84 VLIHANNVQVPLQRLIRVRGTQLPEDNVALAVLNGPLNN-TTPVTGASPGGLREL 143
QY 120 RSLTEILKGGVLIQNRNPOLCYQDTIWKDIFHKNQLALTLDITNRSRACHPCSPMKGS 179

Db 144 RSLTEILKGVGLIRGNPOLCQDMVLWKDVLKKNQLAPVMDMTNRSRACPPCAPTKCN 203
 Qy 180 RCMGESSEDCQSRLTRTCAGGCARCKGPLPTDCHEQCAAGCTGPHSDCLACLFHNSG 239
 Db 204 HCWGESPEDQILTGITCTSGCARCKGRLPTDCHEQCAAGCTGPHSDCLACLFHNSG 263
 Qy 240 ICELHCALVTYNTDTPESMPNPEGRYTFGASCVTTCFYNLSTEVGSCITLVCPPNNQEV 299
 Db 264 ICELHCALVTYNTDTPESMPNPEGRYTFGASCVTTCFYNLSTEVGSCITLVCPPNNQEV 323
 Qy 300 TADGTGRCCKSKPCARVCYGLGMEHLREVRAVTSANIOEFAGCKKIFGSLAFLESFD 359
 Db 324 TADGTGRCCKSKPCAGVYGLGMEHLRGARAITSDNIOEFAGCKKIFGSLAFLESFD 383
 Qy 360 GDPASNTAPLQPEQLQVETLEETIYLYISAWPDSLPSFQNLQVIRGRILHNGAYS 419
 Db 384 GNPSSGVAPLKPHEQLQVETLEETIYLYISAWPESFQDLVSFQNLVRVIRGRILHNGAYS 443
 Qy 420 LTTQGLGISWGLRSLRELGSGLAIHNTLHLCFVHTVPWDQLFRNPQALLHTANRPED 479
 Db 444 LTTQGLGISWGLRSLRELGSGLAIHNTLHLCFVHTVPWDQLFRNPQALLHSGNRPEE 503
 Qy 480 ECVGEGILACHQLCARGHCWGPPTQCVNCSQFLRGQECVEECVLOGLPREYVNAKCLP 539
 Db 504 ACGLEGVLVNSLCARGHCWGPPTQCVNCSQFLRGQECVEECVLOGLPREYVNAKCLP 563
 Qy 540 CHPECPQNGSVTCFGEADQCVACAHYKDPFPCVACRCPGKVPDLSYMPIWKPFBEGE 599
 Db 564 CHPECPQNSSEYCYGEADQCEACAHYKDSVACRCPGKVPDLSYMPIWKPFBEGE 623
 Qy 600 CQPCPINCTHSCVDLDDKGPAPQASPLTSIVSAVGLLVVGVVGLIKRRQKKI 659
 Db 624 CQPCPINCTHSCVDLDBRGCPAQRASPVFTIATVGVLLIIVVGLIKRRQKKI 683
 Qy 660 RKYTMRLLOETEL 673
 Db 684 RKYTMRLLOETEV 697

RESULT 13
 EGFR HUMAN
 ID EGFR_HUMAN STANDARD; PRT; 1210 AA.
 AC P00533; O00688; P06268; Q14225; Q92795; Q9B2S2; Q9GZX1;
 AC Q9H2C9; Q9H3C9; Q9UMD7; Q9UMD8; Q9UMG5;
 DT 21-JUL-1986 (Rel. 01, Created)
 DT 01-NOV-1997 (Rel. 35, Last sequence update)
 DT 01-OCT-2004 (Rel. 45, Last annotation update)
 DE Epidermal growth factor receptor precursor (EC 2.7.1.12) (Receptor
 protein-tyrosine kinase ErbB-1).
 GN Name=EGFR; Synonyms=ERBB1;
 OS Homo sapiens (Human).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 OX NCBI_TaxID=9606;
 [1]
 RN SEQUENCE FROM N.A. (ISOFORM 1).
 RP MEDLINE=84219729; PubMed=6328312;
 RX Ullrich A., Coussens L., Hayflick J.S., Dull T.J., Gray A., Tam A.W.,
 RA Lee J., Yarden Y., Libermann T.A., Schlessinger J., Downward J.,
 RA Mayes E.L.V., Whittle N., Waterfield M.D., Seeburg P.H.;
 RT "Human epidermal growth factor receptor cDNA sequence and aberrant
 expression of the amplified gene in A431 epidermoid carcinoma cells";
 RL Nature 309:418-425(1984).
 RN [2]
 RN SEQUENCE FROM N.A. (ISOFORM 2).
 RP TISSUE=Placenta;
 RC MEDLINE=95382957; PubMed=7654368;
 RX Ilekis J.V., Stark B.C., Scoccia B.;
 RA "Possible role of variant RNA transcripts in the regulation of
 RT epidermal growth factor receptor expression in human placenta";
 RL Mol. Reprod. Dev. 41:149-156(1995).
 RN [3]
 RN SEQUENCE FROM N.A. (ISOFORM 2).

RC TISSUE=Placenta;
 RX MEDLINE=97078686; PubMed=8918811;
 RA Reiter J.L., Maihle N.J.;
 RT "A 1.8 kb alternative transcript from the human epidermal growth
 factor receptor gene encodes a truncated form of the receptor.";
 RL Nucleic Acids Res. 24:4050-4056(1996).
 RN [4]
 RN SEQUENCE FROM N.A. (ISOFORM 2).
 RP TISSUE=Placenta;
 RC MEDLINE=97256547; PubMed=9103388;
 RX Ilekis J.V., Garij J., Niederberger C., Scoccia B.;
 RA "Expression of a truncated epidermal growth factor receptor-like
 RT protein (TEGFR) in ovarian cancer";
 RL Gynecol. Oncol. 65:36-41(1997).
 RN [5]
 RN SEQUENCE FROM N.A. (ISOFORMS 3 AND 4).
 RP TISSUE=Placenta;
 RC MEDLINE=21100872; PubMed=11161793; DOI=10.1006/geno.2000.6341;
 RX Reiter J.L., Threadgill D.W., Eley G.D., Strunk K.E., Dantelsen A.J.,
 RA Schehl Sinclair C., Pearsall R.S., Green P.J., Yee D., Lampland A.L.,
 RA Balasubramaniam S., Crossley T.D., Magnuson T.R., James C.D.,
 RA Maihle N.J.;
 RT "Comparative genomic sequence analysis and isolation of human and
 mouse alternative EGFR transcripts encoding truncated receptor
 RT isoforms.";
 RL Genomics 71:11-20(2001).
 RN [6]
 RN SEQUENCE FROM N.A. (ISOFORM 1), AND VARIANTS GLN-98; ARG-266; LYS-521;
 RP LUE-674; GLY-962 AND PRO-988.
 RA Livingstone R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N.,
 RA Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S.,
 RA Sherwood J.K., Sherwood A.M., Leithausen B.J., Nickerson D.A.;
 RT "NIH-SNPs, environmental genome project. NIHES ES15478, Department
 of Genome Sciences, Seattle, WA (URL: http://egp.gs.washington.edu).";
 RL Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.
 RN [7]
 RN SEQUENCE OF 575-687 FROM N.A.
 RA Reiter J.L., Threadgill D.W., Danielson A.J., Schehl C.M.,
 RA Lampland A.L., Balasubramaniam S., Crossley T.O., Magnuson T.R.,
 RA Maihle N.J.;
 RT "Human and mouse alternative EGFR transcripts encoding only the
 RT extracellular domain of the receptor";
 RL Submitted (FEB-1999) to the EMBL/GenBank/DBJ databases.
 RN [8]
 RN SEQUENCE OF 713-924 FROM N.A.
 RP MEDLINE=84196372; PubMed=6326261;
 RX Lin C.R., Chen W.S., Krueger W., Stolarsky L.S., Weber W., Evans R.M.,
 RA Verma I.M., Gill G.N., Rosenfeld M.G.;
 RT "Expression cloning of human EGF receptor complementary DNA: gene
 RT amplification and three related messenger RNA products in A431
 RT cells";
 RL Science 224:843-848(1984).
 RN [9]
 RN SEQUENCE OF 150-962 FROM N.A.
 RP MEDLINE=84245835; PubMed=6330563;
 RX Xu Y.H., Iehi S., Clark A.J.L., Sullivan M., Wilson R.K., Ma D.P.,
 RA Roe B.A., Merlino G.T., Pastan I.;
 RT "Human epidermal growth factor receptor cDNA is homologous to a
 RT variety of RNAs overproduced in A431 carcinoma cells";
 RL Nature 309:806-810(1984).
 RN [10]
 RN SEQUENCE OF 1028-1210 FROM N.A.
 RP MEDLINE=85046483; PubMed=6093780;
 RX Simmen F.A., Gope M.L., Schulz T.Z., Wright D.A., Carpenter G.,
 RA O'Malley B.W.;
 RT "Isolation of an evolutionarily conserved epidermal growth factor
 RT receptor cDNA from human A431 carcinoma cells";
 RL Biochem. Biophys. Res. Commun. 124:125-132(1984).
 RN [11]
 RN SEQUENCE OF 1-29 FROM N.A.
 RP MEDLINE=88217333; PubMed=3329716;
 RX Haley J.D., Whittle N., Bennett P., Kinchington D., Ullrich A.,
 RA Waterfield M.D.;

Db 672 HIVKRTLRLLQRLRELVETPTSGEAPNOALLILKETFKIKVLGSAFGTVYKGLW 731

Qy 717 IPDGENVKIPVAIKVIRENTSPKANKIILDEAYVMAGVSGPYVRLIGICLTSTVQLVTO 776

Db 732 IPEGEKVKIPVAIKELRENTSPKANKIILDEAYVMASVDNPHVCRLLIGICLTSTVQLITQ 791

Qy 777 LMPYGCILLDHRVNRRLGSDLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHV 836

Db 792 LMPFGCLLDVYVREHKDNIQSQYLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKTPQHV 851

Qy 837 KITDFGLARLLDIDETEVHADGGKVPKMWALESIILRRRTHQSDVMSYGVTVWELMTFG 896

Db 852 KITDFGLAKLLGAEKEYHABGGKVPKMWALESIILHRIYTHQSDVMSYGVTVWELMTFG 911

Qy 897 AKPYDGIIPAREIPDLLEKGERLPQPPCTIDVYMWKMWIDSECRPRFRELVSFSRM 956

Db 912 SKPYDGIIPASEIISILEKGERLPQPPCTIDVYMWKMWIDSECRPRFRELVSFSRM 971

Qy 957 ARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLDDMDGLVDAEYLVPOQGFPCDPAPG 1015

Db 972 ARDPQRYLVITQDGRMHLPSPTDSNFYRALMDEEDMDVDAEYLVPOQGF 1024

Qy 1016 AGMWVHRHRSSTRSGGDLTLGLPSEBAPSLAPSEGAGSDVDFDGLGNGAKGL 1075

Db 1025 -----SSPSTRTPLLSLSLTSN--NSTVACIDRNL 1055

Qy 1076 QSLPHTDPSPLQRYSDPTVPLPSET--DGYVAPLTCSPQEVYVNOVDVPRPSPREGP 1133

Db 1056 QSCPKEDESLQRYSDPTGALTEDSIDTFL-----PVPEYINQ-SVPRKAGSVQNP 1108

Qy 1134 LPAARPAGATLERAKTLPSPKNGVVKDVFAGGAVENPEYL-TPQGAAPQPHPPAFSP 1192

Db 1109 VYHNOPLNP-----APSRDPHYQD--PHSTAVGNPEYLVNTVQ-----PTCVNS 1149

Qy 1193 AFONLYYWDQ-----DP-----PERGAPPSTFKGTPAENPEYL 1226

Db 1150 TFDSPAHAQKSHQISLDNPDYQDFFPKKAPNGIFKGS-TAENAEYL 1198

RESULT 14

AAS83109 PRELIMINARY; PRT; 1210 AA.

AC AAS83109; 14-APR-2004 (TrEMBLrel. 27, Created)

DT 14-APR-2004 (TrEMBLrel. 27, Last sequence update)

DT 14-APR-2004 (TrEMBLrel. 27, Last annotation update)

DE Epidermal growth factor receptor (Erythroblastic leukemia viral (v-erb-b) oncogene homolog, avian).

GN EGFR.

OS Homo sapiens (Human).

OC Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

OX NCBI_TaxID=9606;

RN [1]

RP SEQUENCE FROM N.A.

RA Livingston R.J., Rieder M.J., Chung M.-W., Ritchie T.K., Olson A.N.,

OC Nguyen C.P., Nguyen D.A., Poel C.L., Robertson P.D., Schackwitz W.S.,

RA Sherwood J.K., Sherwood A.M., Leithausen B.J., Nickerson D.A.,

RL Submitted (APR-2004) to the EMBL/GenBank/DBJ databases.

DR EMBL; AY588246; AAS83109.1; -

KW Receptor.

SQ SEQUENCE 1210 AA; 134276 MW; D8A2A50B4EFB6ED2 CRC64;

Query Match 47.18; Score 3155; DB 2; Length 1210;

Best Local Similarity 49.94; Pred. No. 6.6e-156;

Matches 624; Conservative 177; Mismatches 345; Indels 104; Gaps 20;

Qy 1 QVCTGTDMKRLPASPETHLDMLRLHLYQGCQVQGNLELYLPTNAGSLFLQDIQEVQY 60

Db 29 KVCQGTNSKLTQLGTTFEDHFLSLQRMENNEVVLGNLEIYVQENYDLSFLKTIQEVAGY 88

Qy 61 VLIHNOVRQVPLQRLIRVGTOLFEDNYALVLDNGDPLNNTTPTVGTASPGGLRELQRL 120

Db 89 VLIALNTVERIPLENLQIRGNMYENSYALAVLSNYD-----ANKTGLKELPMR 138

Qy 121 SLTEILKGGVLIQORNPOLCYQDITLWKDIFHKNQALATLIDTNRSPACHPCSPMKGSR 180

Db 139 NLQEIILHGAVRFNNPALCNVESIQWRDIVSSDFLSNMSDFQNLGSCOKCDPSCNGS 198

Qy 181 CWGESSEDCOSLRTRTVCAAGCA-RCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSG 239

Db 199 CWGAGEBNCQKTKIICAQCSGCRGKSPSDCHQCAAGCTGPRSDCLVCRKFRDEA 258

Qy 240 ICLHCPALVTYNTDFTESMNPBEGRYTFQASCVTACPYNYLSTDVSGSCTLVCLPHQEV 299

Db 259 TCDTCCPLMLNPTTYQMDVNPBEGRYTFQATCVCCKPRYVYVTDHSGSVRACGADYEM 318

Qy 300 TADGTQRCCKSPKPCARVCYGLMEHLREVRAVTSANIOEFAGCKKIFGLSLFLPESFD 359

Db 319 -EDGGVKKCKCGPCRCVCGNGIGIGEFKDSLSINATNIHKFNCTSIISGLHILPVAFR 377

Qy 360 GDPASNTAPLQBPOLQVFTLEITGYLYISANPDSLPLDLSVFQNLQVIRGRILHNGAYS 419

Db 378 GDSFTHTPPLDPOELDILKTVKEITGFLLIQANPENRTDLHAFENLEIRGRTKHQHQS 437

Qy 420 LTOQGLIGISWIGLRSRELGSGLALIHNTHLCHFVHTVPMDQLFRPHQALLHTANRPED 479

Db 438 LAVVSLNITSLGRLSLEISDGDVVISGNKNLCYANTINWKLLFGTSGQTKIISNRGEN 497

Qy 480 ECVGEGLACHOLCARGHCGPPTQCVCNCSQFRLRGOSCEVECEVLOGLPREYVNAHCLP 539

Db 498 SKATQOVCHALCSPGCGPEPRDCVSCNVRGREGVCKNLLEGEPRFVENSECICQ 557

Qy 540 CHPECFQNGSVTCFGEADQCACAHYKDPFPCVACPSGVKPDLSYMPIMKFPDDEGA 599

Db 558 CHPECLPQAMNITTCGRGPDNCIQCAHYIDGPHCVKTCPAGVMGENNLT-VMKYADAGHV 616

Qy 600 CQCPINCTHSCVVDLDDKGPAPQASPLTSIVSAVVG---ILLVVLGVVFGILIKRRQ 656

Db 617 CHLCHPNTYGTCTGPGLEGCTNGPKIP--SIATGMVALLLLVVALGIG---LFRRRR 671

Qy 657 QKIRKYMRLLOETELVRLPTSGAMPNOAQRILKETELRKVKVLGSGAFGTVYKGIW 716

Db 672 HIVKRTLRLLQRLRELVETPTSGEAPNOALLILKETFKIKVLGSAFGTVYKGLW 731

Qy 717 IPDGENVKIPVAIKVIRENTSPKANKIILDEAYVMAGVSGPYVRLIGICLTSTVQLVTO 776

Db 732 IPEGEKVKIPVAIKELRENTSPKANKIILDEAYVMASVDNPHVCRLLIGICLTSTVQLITQ 791

Qy 777 LMPYGCILLDHRVNRRLGSDLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKSPNHV 836

Db 792 LMPFGCLLDVYVREHKDNIQSQYLLNWCQIAKMSYLEDLVRLVHRDLAARNVLKTPQHV 851

Qy 837 KITDFGLARLLDIDETEVHADGGKVPKMWALESIILRRRTHQSDVMSYGVTVWELMTFG 896

Db 852 KITDFGLAKLLGAEKEYHABGGKVPKMWALESIILHRIYTHQSDVMSYGVTVWELMTFG 911

Qy 897 AKPYDGIIPAREIPDLLEKGERLPQPPCTIDVYMWKMWIDSECRPRFRELVSFSRM 956

Db 912 SKPYDGIIPASEIISILEKGERLPQPPCTIDVYMWKMWIDSECRPRFRELVSFSRM 971

Qy 957 ARDPQRFVVIQ-NEDLGPASPLDSTFYRSLLDDMDGLVDAEYLVPOQGFPCDPAPG 1015

Db 972 ARDPQRYLVITQDGRMHLPSPTDSNFYRALMDEEDMDVDAEYLVPOQGF 1024

Qy 1016 AGMWVHRHRSSTRSGGDLTLGLPSEBAPSLAPSEGAGSDVDFDGLGNGAKGL 1075

Db 1025 -----SSPSTRTPLLSLSLTSN--NSTVACIDRNL 1055

Qy 1076 QSLPHTDPSPLQRYSDPTVPLPSET--DGYVAPLTCSPQEVYVNOVDVPRPSPREGP 1133

Db 1056 QSCPKEDESLQRYSDPTGALTEDSIDTFL-----PVPEYINQ-SVPRKAGSVQNP 1108

Qy 1134 LPAARPAGATLERAKTLPSPKNGVVKDVFAGGAVENPEYL-TPQGAAPQPHPPAFSP 1192

Db 1109 VYHNOPLNP-----APSRDPHYQD--PHSTAVGNPEYLVNTVQ-----PTCVNS 1149

QY 1193 APNLYWDQ-----DP-----PERGAPPSTFKGTPTAENPEYL 1226
 Db 1150 TFDSPARWAQKSHQISLNDPDYQDFFPKAKPNGIFKGS-TAENAEYL 1198

RESULT 15
 Q8MIL8 PRELIMINARY; PRT; 1209 AA.

AC Q8MIL8;
 DT 01-OCT-2002 (T-EMBLrel. 22, Created)
 DT 01-OCT-2002 (T-EMBLrel. 22, Last sequence update)
 DT 01-MAR-2004 (T-EMBLrel. 26, Last annotation update)
 DE Epidermal growth factor receptor.
 OS Sus scrofa (Pig).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
 OX NCBI_TaxID=9823;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA Kim J.G., Vallet J.L., Nonnenan D., Christenson R.K.;
 RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AY117054; AAM77472.1; -
 DR HSSP; Q9H2C9; 1M17.
 DR GO; GO:0016020; C:membrane; IEA.
 DR GO; GO:0005524; F:ATP binding; IEA.
 DR GO; GO:0005006; F:epidermal growth factor receptor activity; IEA.
 DR GO; GO:0004872; F:receptor activity; IEA.
 DR GO; GO:0016740; F:transferase activity; IEA.
 DR GO; GO:0006468; P:protein amino acid phosphorylation; IEA.
 DR GO; GO:0007169; P:transmembrane receptor protein tyrosine kin. .; IEA.
 DR InterPro; IPR000345; CytC_heme_BS.
 DR InterPro; IPR000494; EGFR_L.
 DR InterPro; IPR006211; Furin-like.
 DR InterPro; IPR006212; Furin repeat.
 DR InterPro; IPR009030; Grow fac recept.
 DR InterPro; IPR011009; Kinase like.
 DR InterPro; IPR000719; Prot kinase.
 DR InterPro; IPR001245; Tyr_kinase.
 DR InterPro; IPR008266; Tyr_kinase_AS.
 DR Pfam; PF00757; Furin-like; 1.
 DR Pfam; PF01030; Recep L domain; 2.
 DR PRINTS; PR00109; TYRKINASE.
 DR ProDom; PD000001; Prot_kinase; 1.
 DR SMART; SM00261; FU; 5.
 DR SMART; SM00219; TyrKc; 1.
 DR PROSITE; PS00190; CYTOCHROME C; UNKNOWN_1.
 DR PROSITE; PS00107; PROTEIN KINASE ATP; 1.
 DR PROSITE; PS00111; PROTEIN KINASE DOM; 1.
 DR PROSITE; PS00109; PROTEIN KINASE TYR; 1.
 KW ATP-binding; Kinase; Receptor; Transferase; Tyrosine-protein kinase.
 SQ SEQUENCE 1209 AA; 133531 MW; 268E3FB11E36F90P CRC64;

Query Match 47.0%; Score 3143.5; DB 2; Length 1209;
 Best Local Similarity 50.1%; Pred. No. 2.6e-155;
 Matches 625; Conservative 178; Mismatches 344; Indels 101; Gaps 21;

QY 1 QVCTGDMKRLPASBETHLDMRLHYQGQVVGQNLLETYLPTNASLFLQDIQVQY 60
 Db 29 KVCQGTSSNKLTLQGTFFEDHFLSLQRMFNNEVVLGNLEITYMQNSYNLFLKTIQEVAGY 88

QY 61 VLTAHNOVRQVPLQRLIRVGTOLFEDNYALAVLDNGDPLNNTTPTVGASPGCLRELQLR 120
 Db 89 VLTAHNTVEKIPLENQILNGVNYLNTALVLSN-----YGANKTGLRELPMR 138

QY 121 SLTEILKGGVLIQRNPOLCYQDTILWKDIFPKNNQALTLIDTNRSRACHPCSPMCKGSR 180
 Db 139 NLQEIILQGAVRFSNNPALCHAESIQWEDIVNSDFLSNMSWDFQSLGSCPKDPCGLNGS 198

QY 181 CWGESSEDCQSLTRTVCAGGCA-RCXGPLETDCCHQCQAGCTGPKHSDCLACLFHNHSG 239
 Db 199 CWGAGKENCQKLTKVITCAQCSGRGRSPSDCHNQCAAGCTGPRESDCLVCRFRDEA 258

Search completed: January 25, 2005, 21:29:00
 Job time : 174.437 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:08:29 ; Search time 131.275 Seconds
(without alignments)
3366.641 Million cell updates/sec

Title: US-09-806-703A-4_COPY_24_1255

Perfect score: 6694

Sequence: 1 QVCTGDMKRLPASPETHL.....TFKGTPTAENPEYLGLDVVP 1232

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A Geneseq_23Sep04:.*
1: Geneseqp1980s:.*
2: Geneseqp1990s:.*
3: Geneseqp2000s:.*
4: Geneseqp2001s:.*
5: Geneseqp2002s:.*
6: Geneseqp2003as:.*
7: Geneseqp2003bs:.*
8: Geneseqp2004s:.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6694	100.0	1255	3 AAY92620	Aay92620 Human her
2	6694	100.0	1255	4 AAB60167	Aab60167 HER2 tran
3	6694	100.0	1255	4 AAE12130	Aae12130 Human tyr
4	6694	100.0	1255	5 AAE26349	Aae26349 Human HER
5	6694	100.0	1255	5 AAE26366	Aae26366 Human HER
6	6694	100.0	1255	5 AAU74545	Aau74545 Human HER
7	6694	100.0	1255	6 ABR47447	Abp47447 Breast ca
8	6694	100.0	1255	6 ABR47408	Abp47408 Human HER
9	6694	100.0	1255	6 AAE38390	Aae38390 Human c-e
10	6694	100.0	1255	6 ADA38143	Ada38143 Human erb
11	6694	100.0	1255	7 ADA37255	Ada37255 Human Erb
12	6694	100.0	1255	7 ADB67621	Adb67621 Human epi
13	6694	100.0	1255	8 ADH13187	Adh13187 Human mal
14	6694	100.0	1255	8 ADM72831	Adm72831 Human HER
15	6694	100.0	1255	8 ADO20009	Ado20009 Human PRO
16	6688	99.9	1255	2 AAU01111	Aau01111 HER-2/neu
17	6688	99.9	1255	2 AAU92406	Aau92406 Human HER
18	6688	99.9	1255	3 AAY84780	Aay84780 Amino aci
19	6688	99.9	1255	3 AAB21198	Aab21198 Human HER
20	6688	99.9	1255	4 AAG88267	Agg88267 HER2/neu
21	6688	99.9	1255	4 AAB85458	Aab85458 Human HER
22	6688	99.9	1255	5 AAE20479	Aae20479 Human HER
23	6688	99.9	1255	5 AAU77114	Aau77114 Human HER
24	6688	99.9	1255	5 AAM51143	Aam51143 Human HER
25	6688	99.9	1255	5 AAE24067	Aae24067 Human HER

ALIGNMENTS

RESULT 1

AA92620

ID AAY92620 standard; protein; 1255 AA.

XX AC AAY92620;

XX DT 10-AUG-2000 (first entry)

XX DE Human heregulin 2 (Her2).

XX KW Heregulin 2; Her2; vaccination; cytotoxic T-lymphocyte immunity;
self-protein; cancer; breast cancer; prostate cancer;
cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

XX FH Key Location/Qualifiers

FT FT Domain 1..173
/label= N-terminal
/note= "mature polypeptide"

FT FT Region 5..25
/label= insertion region

FT FT Region 59..73
/note= "suitable for foreign epitope insertion"

FT FT Region 103..117
/label= insertion region
/note= "suitable for foreign epitope insertion"

FT FT Region 149..163
/label= insertion region
/note= "suitable for foreign epitope insertion"

FT FT Domain 174..323
/label= Cysteine-rich domain
/note= "suitable for foreign epitope insertion"

FT FT Region 210..224
/label= insertion region
/note= "suitable for foreign epitope insertion"

FT FT Region 250..264
/label= insertion region
/note= "suitable for foreign epitope insertion"

FT FT Domain 324..483
/label= Ligand_binding_domain
/note= "suitable for foreign epitope insertion"

FT FT Region 325..339
/label= insertion region
/note= "suitable for foreign epitope insertion"

FT FT Region 369..383
/label= insertion region
/note= "suitable for foreign epitope insertion"

Ab43687 Human c-e
Ab82066 Human Her
Adc09593 Her2/Neu
Add25484 Binding d
Ade63281 Human Pro
Ade76190 Human HER
Adf45048 Human kin
Adj66554 Her2 prot
Adl90083 Human Her
Adq17193 Human sof
Adc35106 Human bre
Admi2582 Human Her
Ado38813 Human Her
Aau98923 Sequence
Aau98923 Human bre
Aab21208 Human HER
Aab21199 Rat HER-2
Aam51144 Rat Her-2
Abr82067 Rat Her2/
Ade63279 Rat Prote

Region 465..479
/label= insertion region
/note= "suitable for foreign epitope insertion"
Domain 484..623
/label= Cysteine_rich_domain
Region 579..593
/label= insertion region
/note= "suitable for foreign epitope insertion"
Domain 624..654
/label= Transmembrane_domain
Region 632..652
/label= insertion region
/note= "suitable for foreign epitope insertion"
Region 653..667
/label= insertion region
/note= "suitable for foreign epitope insertion"
Domain 655..1010
/label= Tyrosine_kinase_domain
Region 661..675
/label= insertion region
/note= "suitable for foreign epitope insertion"
Region 695..709
/label= insertion region
/note= "suitable for foreign epitope insertion"
Region 710..730
/label= insertion region
/note= "suitable for foreign epitope insertion"
Domain 1011..1235
/label= C-terminal_domain

WO200020027-A2.

13-APR-2000.

05-OCT-1999; 99WO-DK000525.

05-OCT-1998; 98DK-00001261.

20-OCT-1998; 98US-0105011P.

(WEBI-) M & E BIOTECH AS.

Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

Gautam A, Birk P, Karlsson G;

WPI; 2000-349917/30.

N-PSDB; AAA09455.

Inducing immune responses to weakly immunogenic, tumor associated peptide antigens for the treatment of breast and prostate cancer.

Claim 62; Page 193-198; 220pp; English.

This is the human heregulin 2 (Her2) sequence. Immunogenic analogues of Her2 can be used in the claimed method as an autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody binding regions and cysteine residues involved in disulfide bonds are preserved in the immunogenized forms. Regions suitable for the insertion of foreign T helper epitopes were identified (see features table). The method is used for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (self-proteins), e.g. human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively

	SQ	Sequence 1255 AA;
		Query Match 100.0%; Score 6694; DB 3; Length 1255;
		Best Local Similarity 100.0%; Pred. NO. 0;
		Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY	1	QVCTGDMKRLRPASPETHDMLRHLVYQGCQVQVQGNLELTLYLPTNASLSFLQDIQEVQY 60
DB	24	QVCTGDMKRLRPASPETHDMLRHLVYQGCQVQVQGNLELTLYLPTNASLSFLQDIQEVQY 83
QY	61	VLIAHNQVRQVPLQRLRIVRGTLQDPEDNYALVLDNGDPLNNTTPTVTGASPGGLRLQLR 120
DB	84	VLIAHNQVRQVPLQRLRIVRGTLQDPEDNYALVLDNGDPLNNTTPTVTGASPGGLRLQLR 143
QY	121	SUTEILKGGVLIQRPQCYQDTILWKDIFHKNNQALALTLIDNRSRACHPCSPCKGSR 180
DB	144	SUTEILKGGVLIQRPQCYQDTILWKDIFHKNNQALALTLIDNRSRACHPCSPCKGSR 203
QY	181	CWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLFHNHSGI 240
DB	204	CWGESSEDCOSLTRTVCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLFHNHSGI 263
QY	241	CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNHQVET 300
DB	264	CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNHQVET 323
QY	301	AEDGTQRCCKSKPCARVCYGLMBHLREVRAVTSANTQBFAGCKKIFGSLAPLPESFDG 360
DB	324	AEDGTQRCCKSKPCARVCYGLMBHLREVRAVTSANTQBFAGCKKIFGSLAPLPESFDG 383
QY	361	DPASNTAPLOPQLOVFEETLEITGYLYISAMPDSLPDLSVFQNLQVIRGRILHNGAYS 420
DB	384	DPASNTAPLOPQLOVFEETLEITGYLYISAMPDSLPDLSVFQNLQVIRGRILHNGAYS 443
QY	421	TLQGLGISWLGLRSLRELGSGLALIHNNTHLCFVHTVPWDQLFRNPQHALLTANRPEDE 480
DB	444	TLQGLGISWLGLRSLRELGSGLALIHNNTHLCFVHTVPWDQLFRNPQHALLTANRPEDE 503
QY	481	CVGEGLAHOLCARGHCWGPGTQCNCQFIRGQECVEECVLCQLPREYNARHCLPC 540
DB	504	CVGEGLAHOLCARGHCWGPGTQCNCQFIRGQECVEECVLCQLPREYNARHCLPC 563
QY	541	HPECQPNQSVTCFQPEADQCVACAHYKDPFPCVACRCSGVKPDLSYMPFPPDEGAC 600
DB	564	HPECQPNQSVTCFQPEADQCVACAHYKDPFPCVACRCSGVKPDLSYMPFPPDEGAC 623
QY	601	QPCPINCTHSCVDLDDKGPAPQORASPLTSIYSAVVGILLVVLGVVFGILIKRQOKIR 660
DB	624	QPCPINCTHSCVDLDDKGPAPQORASPLTSIYSAVVGILLVVLGVVFGILIKRQOKIR 683
QY	661	KYTMERLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 720
DB	684	KYTMERLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 743
QY	721	ENVKIPVAIKVLRNTSPKANKEIIDEAVMAGVSPYVSRILGICLTSTVOLVTOLMPY 780
DB	744	ENVKIPVAIKVLRNTSPKANKEIIDEAVMAGVSPYVSRILGICLTSTVOLVTOLMPY 803
QY	781	GCLLDHVRNRLGSLQDLNLCMQIAKGMYSLEVDRLVHRDLAARNVLKSPNHVKITD 840
DB	804	GCLLDHVRNRLGSLQDLNLCMQIAKGMYSLEVDRLVHRDLAARNVLKSPNHVKITD 863
QY	841	FGALRLDIDETEHADGGKVPDKWMALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900
DB	864	FGALRLDIDETEHADGGKVPDKWMALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923
QY	901	DGIPAREIPDLLEKGERLPQPPICITDVMIMVVKCWMIDSECRPFRELVSFSSRMARDP 960
DB	924	DGIPAREIPDLLEKGERLPQPPICITDVMIMVVKCWMIDSECRPFRELVSFSSRMARDP 983
QY	961	QRFFVVIQNEDLGPASPLDSTFYRSLLEDDMGDLVDABEYLVPQGGFFCDDPAPGAGMV 1020
DB	984	QRFFVVIQNEDLGPASPLDSTFYRSLLEDDMGDLVDABEYLVPQGGFFCDDPAPGAGMV 1043

```
QY 1021 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1080
DB 1044 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1103
QY 1081 HDSPPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPSPREGPLPAARPA 1140
DB 1104 HDSPPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLYYW 1200
DB 1164 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLYYW 1223
QY 1201 DQPPPERGAPPSFTKGTPTAENPEYLGDLVVP 1232
DB 1224 DQPPPERGAPPSFTKGTPTAENPEYLGDLVVP 1255

RESULT 2
AAB60167
ID AAB60167 standard; protein; 1255 AA.
XX
AC AAB60167;
XX
DT 03-APR-2001 (first entry)
XX
DE HER2 transgene plasmid construct encoded protein.
XX
KW Human; HER2; ErbB2 receptor; p185neu; maytansinoid conjugate; cancer;
KW antibody.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN W0200100244-A2.
XX
PD 04-JAN-2001.
XX
PF 23-JUN-2000; 2000WO-US017229.
XX
PR 25-JUN-1999; 99US-0141316P.
PR 16-MAR-2000; 2000US-0189844P.
XX
PA (GETH ) GENENTECH INC.
XX
PI Erickeon S, Schwall R;
XX
DR WPI; 2001-061962/07.
DR N-PSDB; AAF24297.
XX
PT Treating tumors, particularly breast cancers, which overexpress an ErbB
PT receptor and does not respond to an anti-ErbB antibody, comprises
PT conjugating the antibody to a maytansinoid.
XX
PS Example 3; Fig 4; 92pp; English.
XX
CC The present invention provides a method of treating cancer by
CC administering a conjugate of anti-ErbB antibody with a maytansinoid. In
CC particular, the antibody is directed against ErbB2 (also known as HER2
CC and p185neu). The method is particularly useful in the treatment of
CC breast, ovarian, stomach, endometrial, salivary gland, lung, kidney,
CC colon, colorectal, thyroid, pancreatic, prostate and bladder cancers
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 4; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QVCTGTDMLKRLPASPEETHLDMRLHYQGCQVQGNLELTYLPTNASLSFLQDIOEVQGY 60
DB 24 QVCTGTDMLKRLPASPEETHLDMRLHYQGCQVQGNLELTYLPTNASLSFLQDIOEVQGY 83
```

```
QY 61 VLIAHNQVQVPLQRLRIVRGTQLFDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
DB 84 VLIAHNQVQVPLQRLRIVRGTQLFDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143
QY 121 SLTEILKGGVLIQORNQOLCYQDTILWKDIFHKNNQALATLIDTNRSRACHPCSPMCKGSR 180
DB 144 SLTEILKGGVLIQORNQOLCYQDTILWKDIFHKNNQALATLIDTNRSRACHPCSPMCKGSR 203
QY 181 CWGESSEDCQSLTRTVCAGSCARCKGPLPTDCCHCCOACAGCTGPKHSDCLACILHFNHSGI 240
DB 204 CWGESSEDCQSLTRTVCAGSCARCKGPLPTDCCHCCOACAGCTGPKHSDCLACILHFNHSGI 263
QY 241 CELHCPALVTYNTDITFESMPNPEGRYTFGASCVTACPYNYLSTDVSGSCTLVCLPHNQEV 300
DB 264 CELHCPALVTYNTDITFESMPNPEGRYTFGASCVTACPYNYLSTDVSGSCTLVCLPHNQEV 323
QY 301 AEDGTORCEKCKPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 360
DB 324 AEDGTORCEKCKPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 383
QY 361 DPASNTAPLOPEOLQVFETLEETGYLYISAWPDSLPLSVFQNLQVIRGIRILHNGAYSL 420
DB 384 DPASNTAPLOPEOLQVFETLEETGYLYISAWPDSLPLSVFQNLQVIRGIRILHNGAYSL 443
QY 421 TLQGLGISWLGRLSLRELGLALIIHNHNLFCFVHTVPMDQLFRNPHQALLHTANRPEDE 480
DB 444 TLQGLGISWLGRLSLRELGLALIIHNHNLFCFVHTVPMDQLFRNPHQALLHTANRPEDE 503
QY 481 CVGEGLAHQLCARGHCWGPPTQCVNCSQFLRGQCEVBEQVLOGLPREYVVARHCLPC 540
DB 504 CVGEGLAHQLCARGHCWGPPTQCVNCSQFLRGQCEVBEQVLOGLPREYVVARHCLPC 563
QY 541 HPECQPNQSVTCFGEADQCVACAHKDPFPCVACPSGVKPDLSVMP1WKPDDEBAC 600
DB 564 HPECQPNQSVTCFGEADQCVACAHKDPFPCVACPSGVKPDLSVMP1WKPDDEBAC 623
QY 601 QPCPINCTHSCVDLDDKGPAPAEQASPLTSIVSAVVGILLVVLVGVVFGILIKRQOKIR 660
DB 624 QPCPINCTHSCVDLDDKGPAPAEQASPLTSIVSAVVGILLVVLVGVVFGILIKRQOKIR 683
QY 661 KYTMRLLQETELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAFVYVGIWIPDG 720
DB 684 KYTMRLLQETELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAFVYVGIWIPDG 743
QY 721 ENVKIPVAIKVLRENTSPRANKELDEAYVMAGVSPYVSRLLGICLTSVQLVTQJMPY 780
DB 744 ENVKIPVAIKVLRENTSPRANKELDEAYVMAGVSPYVSRLLGICLTSVQLVTQJMPY 803
QY 781 GCLLDHVRENRLGSLQDLNLCWQIAKMSYLEDVRLVHRDLAARNVLYKSPNHVKITD 840
DB 804 GCLLDHVRENRLGSLQDLNLCWQIAKMSYLEDVRLVHRDLAARNVLYKSPNHVKITD 863
QY 841 FGLARLLDIDETEHADGKVP1KWMALSIILRRRFTHQSDVWSYGVTVWELMTFGAKPY 900
DB 864 FGLARLLDIDETEHADGKVP1KWMALSIILRRRFTHQSDVWSYGVTVWELMTFGAKPY 923
QY 901 DGPAREIPDLLEKGERLPOPPICITIDVYMWKMWIDSECPREPRFELVSEFSWARDP 960
DB 924 DGPAREIPDLLEKGERLPOPPICITIDVYMWKMWIDSECPREPRFELVSEFSWARDP 983
QY 961 QRFVVIQNEEDLGPASPLDSTFYRSLLEDDMDGLVDAEYLVQPQGFPCPDPAFGAGMW 1020
DB 984 QRFVVIQNEEDLGPASPLDSTFYRSLLEDDMDGLVDAEYLVQPQGFPCPDPAFGAGMW 1043
QY 1021 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1080
DB 1044 HHRSSSTRSGGDLTLGLEPSEEAAPRSLAPSEGAGSDVFDGDLGMAAGLQSLPT 1103
QY 1081 HDSPPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPSPREGPLPAARPA 1140
DB 1104 HDSPPLQRYSEDPTVPLPSETDGVAPLTCSPQPEYVQPDVPPSPREGPLPAARPA 1163
QY 1141 GATLERAKTILSPGKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLYYW 1200
```

Db 1164 GATLERAKTSLPGKNGVWDVFAFGGAVENPEYLTPQGAAPQPHPPAFSPAFDNLYW 1223
Qy 1201 DQDPPERGAPPSTFKGTPTAENPEYLGLOVPV 1232
Db 1224 DQDPPERGAPPSTFKGTPTAENPEYLGLOVPV 1255

RESULT 3
AAE12130
ID AAE12130 standard; protein; 1255 AA.
XX
AC AAE12130;
XX
DT 18-DEC-2001 (first entry)
XX
DE Human tyrosine kinase-type receptor, HER-2.
XX
KW Therapeutic compound; major histocompatibility complex; vaccine;
KW antigenic peptide; MHC; immunoregulatory; immune response; HER-2;
KW adoptive immunotherapy; anti-cancer; breast cancer antigen; APC;
KW antigen presenting cell; human; tyrosine kinase-type receptor.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Region 774..782
FT /note= "Antigenic epitope"
XX

W0200168677-A2.
XX
XX 20-SEP-2001.
XX
XX 16-MAR-2001; 2001WO-US040328.
XX
XX 16-MAR-2000; 2000US-00527487.
XX
XX (GENZ) GENZYME CORP.
XX
XX Nicolette CA;
XX
XX WPI; 2001-616284/71.
XX N-PSDB; AAD19731.
XX

Novel synthetic therapeutic compound for inducing immune response and for use in adoptive immunotherapy, has enhanced binding to major histocompatibility molecules and enhanced immunoregulatory properties.
Claim 4; Page 63-67; 69pp; English.

The invention relates to synthetic therapeutic compounds (antigenic peptides) with enhanced binding to major histocompatibility complex (MHC) molecules and enhanced immunoregulatory properties relative to their natural counterparts. Compounds of the invention are useful for inducing an immune response in a subject and for use in adoptive immunotherapy. They are useful as components of anti-cancer vaccines and to expand immune effector cells that are specific for cancers characterised by expression of the breast cancer antigen, HER-2. Polynucleotides that encode peptides of the invention are useful as hybridisation probes and as primers for the detection of genes of gene transcripts that are expressed in antigen presenting cells (APCs), to confirm transduction of polynucleotides into host cells. The present sequence is human tyrosine kinase-type receptor, HER-2. Compounds of the invention are designed based on the HER-2 antigenic peptide (774-782)

Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 4; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGDMKRLPASPEHLDMLRHLVYQGCQVQGNLELTYLPTNASLSFLQDIEVQGY 60
|||||

Db 24 QVCTGDMKRLPASPEHLDMLRHLVYQGCQVQGNLELTYLPTNASLSFLQDIEVQGY 83
Qy 61 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTPTVTGASPGGLREQLR 120
|||
Db 84 VLIAHNQVRQVPLQRLRIVRGTQLFEDNYALAVLDNGDPLNNTPTVTGASPGGLREQLR 143
|||
Qy 121 SLTEILKGGVLIQRNPOLCYQDITILWKDI FHKNNQALATLIDTNRSRACHPCSPMCKGSR 180
|||
Db 144 SLTEILKGGVLIQRNPOLCYQDITILWKDI FHKNNQALATLIDTNRSRACHPCSPMCKGSR 203
|||
Qy 181 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
|||
Db 204 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
|||
Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVNSTDVGSGCTLVCPHNGEVT 300
|||
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYVNSTDVGSGCTLVCPHNGEVT 323
|||
Qy 301 AEDGTORCEKCKPCARVCYGLGMEHLREVRVTSANTQEPAGCKKIFGSLAFUPEGFDG 360
|||
Db 324 AEDGTORCEKCKPCARVCYGLGMEHLREVRVTSANTQEPAGCKKIFGSLAFUPEGFDG 383
|||
Qy 361 DPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPLDSVFQNLQVIRGILHNGAYSL 420
|||
Db 384 DPASNTAPLQPEQLQVFETLEEITGYLYISAWPDSLPLDSVFQNLQVIRGILHNGAYSL 443
|||
Qy 421 TLQGLGISWLGRLSRLGSLALIHNNTHLCFVHTVTPWDOLFNRPHQALHTANRPEDE 480
|||
Db 444 TLQGLGISWLGRLSRLGSLALIHNNTHLCFVHTVTPWDOLFNRPHQALHTANRPEDE 503
|||
Qy 481 CVGEGLACHQLCARGHCWGPPTOCVNCSEFLRQCEVCEECRVLQGLPREYVNAHCLIPC 540
|||
Db 504 CVGEGLACHQLCARGHCWGPPTOCVNCSEFLRQCEVCEECRVLQGLPREYVNAHCLIPC 563
|||
Qy 541 HPECQPONGSVTCFGPEADQCVACAHYKDPFCFVARCPSGVKPDLSYMPIWKFPDEGAC 600
|||
Db 564 HPECQPONGSVTCFGPEADQCVACAHYKDPFCFVARCPSGVKPDLSYMPIWKFPDEGAC 623
|||
Qy 601 QPCPINCTHSCVDLDDKGPAPQASPLTSIVSAVVGILLVVLGVWFGLIKRQOKIR 660
|||
Db 624 QPCPINCTHSCVDLDDKGPAPQASPLTSIVSAVVGILLVVLGVWFGLIKRQOKIR 683
|||
Qy 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELAKVKVLGSGAGFTVYKGIWIPDG 720
|||
Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELAKVKVLGSGAGFTVYKGIWIPDG 743
|||
Qy 721 ENVKIPVAIKVLRNTSPKANKEILDEAYVWAGVSPVSRLLGICLTSTVOLATOLMPY 780
|||
Db 744 ENVKIPVAIKVLRNTSPKANKEILDEAYVWAGVSPVSRLLGICLTSTVOLATOLMPY 803
|||
Qy 781 GCLLDHVRNRCGLGSQDLLNWCQIAKGMVLELDVRLVHRDLAARNVLKSPNHVKITD 840
|||
Db 804 GCLLDHVRNRCGLGSQDLLNWCQIAKGMVLELDVRLVHRDLAARNVLKSPNHVKITD 863
|||
Qy 841 FGLARLLDIDETEHADGKVPDKWMALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900
|||
Db 864 FGLARLLDIDETEHADGKVPDKWMALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923
|||
Qy 901 DGIPIAREIPDLLEKGERLPOPPICITDVTVMVWKWMDSECRPRELVSFESRWARDP 960
|||
Db 924 DGIPIAREIPDLLEKGERLPOPPICITDVTVMVWKWMDSECRPRELVSFESRWARDP 983
|||
Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSLLDDMDGDLVDAEYLVPOQGFCCPDPAAGGMV 1020
|||
Db 984 QRFVVIQNEIDLGPASPLDSTFYRSLLDDMDGDLVDAEYLVPOQGFCCPDPAAGGMV 1043
|||
Qy 1021 HHRHSSSTRSGGDLITGLFEPSEBEAPRSLAPSEGAGSDVFDGDLGMAKGLQSLPT 1080
|||
Db 1044 HHRHSSSTRSGGDLITGLFEPSEBEAPRSLAPSEGAGSDVFDGDLGMAKGLQSLPT 1103
|||
Qy 1081 HDPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPOPSPREGPLPAARPA 1140
|||
Db 1104 HDPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPOPSPREGPLPAARPA 1163
|||

Qy 1141 GATLERAKTILSPKNGVGVKDVAFAGGAVENPEYLTPOGGAPOPHPPAPSPAFDNLYYW 1200
 Db 1164 GATLERAKTILSPKNGVGVKDVAFAGGAVENPEYLTPOGGAPOPHPPAPSPAFDNLYYW 1223
 Qy 1201 DQDPPERGAPPSTFKGTPTAENPEYLGIDVPV 1232
 Db 1224 DQDPPERGAPPSTFKGTPTAENPEYLGIDVPV 1255

RESULT 4

AAE26349 ID AAE26349 standard; protein; 1255 AA.

XX AC AAE26349;

DT 13-DEC-2002 (first entry)

XX Human HER-2 protein.

XX Transgenic animal; transgenic; mammary gland cell; HER2; tumour; cancer;
 KW therapy; apoptosis; cytostatic; human.

XX Homo sapiens.

XX US2002035736-A1.

XX 21-MAR-2002.

XX 16-MAR-2001; 2001US-00811115.

XX 16-MAR-2000; 2000US-0189844P.

XX (ERIC/) ERICKSON S.

XX (KING/) KING K.

XX (SCHW/) SCHWALL R.

XX Erickson S, King K, Schwall R;

XX WPI; 2002-403759/43.

XX N-PSDB; AAD43934, AAD43935.

XX New transgenic non-human mammal that produces detectable levels of a
 PT native human HER2 protein in its mammary gland cells, useful as tumor
 PT models for testing HER2-directed cancer therapies, and for identifying
 PT anticancer agents.

XX Example 2; Page 26-29; 83pp; English.

XX The invention relates to a transgenic non-human mammal that produces in
 CC its mammary gland cells detectable levels of a native human HER2 protein
 CC or its fragment. The transgenic animals are useful as tumour models for
 CC testing HER2-directed cancer therapies, and for identifying anticancer
 CC agents. The animals may also be used as source of cells which can be
 CC immortalised in culture, in screening for compounds that have potential
 CC as prophylactic or therapeutic treatments of diseases or disorders
 CC involving expression of HER2. The anti-cancer molecules are useful for
 CC inducing apoptosis or cell death of cancer cells. The present sequence is
 CC human HER-2 protein

XX Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 5; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGTDMKRLPASPEETHDMLRLHYQGCVVQGNLELYLPTNALSFLQDIQEVQY 60

Db 24 QVCTGTDMKRLPASPEETHDMLRLHYQGCVVQGNLELYLPTNALSFLQDIQEVQY 83

Qy 61 VLIAHNQVQVPLQRLIRVGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120

Db 84 VLIAHNQVQVPLQRLIRVGTQLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143

Qy 121 SLTEILKGGVLIQORNPOLCYQDITLWKDIPHKNNQALALTIDNRSRACHPCSPMCKGSR 180
 Db 144 SLTEILKGGVLIQORNPOLCYQDITLWKDIPHKNNQALALTIDNRSRACHPCSPMCKGSR 203
 Qy 181 CWGESSEDCQSLTRTVGAGGACRCKGPLPTDCCHEQCAAGCTGPKHSIDCLACLHFNHSGI 240
 Db 204 CWGESSEDCQSLTRTVGAGGACRCKGPLPTDCCHEQCAAGCTGPKHSIDCLACLHFNHSGI 263
 Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPHNOEVT 300
 Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPHNOEVT 323
 Qy 301 AEDGTORCEKCKSKPCARVCYGLGMEHLREVRVTSANIQEFACKKIFGSLAFLPESFDG 360
 Db 324 AEDGTORCEKCKSKPCARVCYGLGMEHLREVRVTSANIQEFACKKIFGSLAFLPESFDG 383
 Qy 361 DPASNTAPIQPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 420
 Db 384 DPASNTAPIQPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 443
 Qy 421 TLQGLGISWLGRLSRLSGSLALIHNNTHLCFVHTVPMDOLFRNPHQALLHTANRPEDE 480
 Db 444 TLQGLGISWLGRLSRLSGSLALIHNNTHLCFVHTVPMDOLFRNPHQALLHTANRPEDE 503
 Qy 481 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQECVEECRVLQGLPREYVVARHCLPC 540
 Db 504 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFLRGQECVEECRVLQGLPREYVVARHCLPC 563
 Qy 541 HPECQFQNGSVTCFQPEADQCVACAHYKDPFFCVARCPGKVPDLSTYMPWKPFDEBAG 600
 Db 564 HPECQFQNGSVTCFQPEADQCVACAHYKDPFFCVARCPGKVPDLSTYMPWKPFDEBAG 623
 Qy 601 QPCPINCTHSCVDLDDKGCPEAQRASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 660
 Db 624 QPCPINCTHSCVDLDDKGCPEAQRASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 683
 Qy 661 KYTMRLLQBELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 720
 Db 684 KYTMRLLQBELVEPLTPSGAMPNOAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 743
 Qy 721 ENVKIPVAIKVARENTSPKANKEILDEAYVMAGVSPYVSRLGICLTSTVQLVTQMPY 780
 Db 744 ENVKIPVAIKVARENTSPKANKEILDEAYVMAGVSPYVSRLGICLTSTVQLVTQMPY 803
 Qy 781 GCLLDHVRENRLGSGDILLNWCQIAKGSYLEDLVRLVHRDLAARNVLKSPNHVKITD 840
 Db 804 GCLLDHVRENRLGSGDILLNWCQIAKGSYLEDLVRLVHRDLAARNVLKSPNHVKITD 863
 Qy 841 FGLARLLDIDETEHADGGKVPKMWALRESILRRRFTHOSDVMWSYGVTVWELMTFGAKPY 900
 Db 864 FGLARLLDIDETEHADGGKVPKMWALRESILRRRFTHOSDVMWSYGVTVWELMTFGAKPY 923
 Qy 901 DGIPAREIPDLLEKGERLPQPPICITIDVYIMVVKWMIDSECRPRFRELVSFSEMRARDP 960
 Db 924 DGIPAREIPDLLEKGERLPQPPICITIDVYIMVVKWMIDSECRPRFRELVSFSEMRARDP 983
 Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSILDEDDMGDLVDAEYLVPOQGFCCPDPAAGAGMV 1020
 Db 984 QRFVVIQNEIDLGPASPLDSTFYRSILDEDDMGDLVDAEYLVPOQGFCCPDPAAGAGMV 1043
 Qy 1021 HHRHRSSTRSGGDLTLGLEPSEEBAPRSLAPSGAGSDVDFDGLGMGAAGLQSLPT 1080
 Db 1044 HHRHRSSTRSGGDLTLGLEPSEEBAPRSLAPSGAGSDVDFDGLGMGAAGLQSLPT 1103
 Qy 1081 HDPSPLQRYSEDPVLPSETDGYVAPLTCSPQPEYVQPDVRPQPPSPREGPLPAARPA 1140
 Db 1104 HDPSPLQRYSEDPVLPSETDGYVAPLTCSPQPEYVQPDVRPQPPSPREGPLPAARPA 1163
 Qy 1141 GATLERAKTILSPKNGVGVKDVAFAGGAVENPEYLTPOGGAPOPHPPAPSPAFDNLYYW 1200
 Db 1164 GATLERAKTILSPKNGVGVKDVAFAGGAVENPEYLTPOGGAPOPHPPAPSPAFDNLYYW 1223

	QY	1201	DQDPPRGAPPSTFKGTPTAENPEYLGLDVV	1232	
	DB	1224	DQDPPRGAPPSTFKGTPTAENPEYLGLDVV	1255	
		RESULT 5			
		AAE26366			
		ID	AAE26366 standard; protein; 1255 AA.		
	XX	AC	AAE26366;		
	XX	DT	13-DEC-2002 (first entry)		
	XX	DE	Human Her2 antigen.		
	XX	DE	Human; immune response; T-helper cell epitope; chitosan; CTL response;		
	KW	KW	vaccine; prostate cancer; breast cancer; Her2 antigen; cytostatic;		
	KW	KW	immunostimulant.		
	OS	OS	Homo sapiens.		
	XX	XX			
	XX	Key	Location/Qualifiers		
	FH	Peptide	1..23		
	FT	FT	/label= Signal_peptide		
	FT	Protein	24..1255		
	FT		/note= "Mature human Her2 antigen"		
	XX	WO200234287-A2.			
	PX	02-MAY-2002.			
	XX	26-OCT-2001; 2001WO-DK000705.			
	XX	27-OCT-2000; 2000DK-00001606.			
	PR	03-NOV-2000; 2000US-0245166P.			
	PR	18-JUN-2001; 2001DK-00000936.			
	XX	(PHAR-) PHARMEXA AS.			
	XX	Beier AM, Gautam A, Mouritsen S;			
	P1	WPI; 2002-463339/49.			
	DR	N-PSDB; AAD43986.			
	XX	Inducing or enhancing an immune response against an antigen, particularly			
	PT	cytotoxic T-lymphocyte responses, for treating or ameliorating prostate			
	PT	or breast cancer, comprises administering the antigen formulated with			
	PT	chitosan.			
	XX	Disclosure; Page 91-95; 97pp; English.			
	XX	The invention relates to a method for inducing or enhancing an immune			
	CC	response against a polypeptide antigen in an animal, including human. The			
	CC	method comprises administering the polypeptide antigen or at least one			
	CC	variant which includes at least one first T-helper cell epitope that is			
	CC	foreign to the animal (foreign TH epitope) and is formulated with			
	CC	chitosan. The polypeptide antigen is weakly immunogenic or non-			
	CC	immunogenic. The invention is used as vaccine. The chitosan and			
	CC	polypeptide antigen or its variant are useful in the preparation of an			
	CC	immunogenic composition for inducing or enhancing an immune response,			
	CC	particularly CTL response, against the polypeptide or protein antigen.			
	CC	The method for inducing or enhancing an immune response is useful in			
	CC	treating or ameliorating cancer, e.g. prostate or breast cancer. The			
	CC	present sequence is human Her2 antigen			
	XX				
	SQ	Sequence 1255 AA;			
		Query Match 100.0%; Score 6694; DB 5; Length 1255;			
		Best Local Similarity 100.0%; Pred. No. 0;			
		Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;			
	QY	1	QCVTGDMKLRLPASPETHLMDLRHLHYQGCVVQNLELTLYPTNWSILFLQIQEVQGY	60	

QY 1141 GATLERAKTISPGKNGVVDVAFGGAVENPEYLTPOGGAPOPHPPAFSPAFDNLYYW 1200
 |||||
 DB 1164 GATLERAKTISPGKNGVVDVAFGGAVENPEYLTPOGGAPOPHPPAFSPAFDNLYYW 1223
 |||||
 QY 1201 DQDPPRGAPPSTFKGTPTAENPEYLGIDVVPV 1232
 |||||
 DB 1224 DQDPPRGAPPSTFKGTPTAENPEYLGIDVVPV 1255
 |||||

RESULT 6

AAU74545
 ID AAU74545 standard; protein; 1255 AA.

XX AC AAU74545;

XX DT 23-APR-2002 (first entry)

XX DE Human HER2 (ErbB2) polypeptide.

XX KW Human; HER2; ErbB; epidermal growth factor receptor; receptor;
 KW anti-ErbB antibody-maytansinoid conjugate; cancer; tumour; breast; ovary;
 KW stomach; endometrium; salivary gland; lung; kidney; colon; colorectum;
 KW thyroid; pancreas; prostate; bladder; ErbB2; neuronal disorder;
 KW glial disorder; astrocytal disorder; hypothalamic disorder;
 KW glandular disorder; macrophagal disorder; epithelial disorder;
 KW stromal disorder; blastocoelec disorder; inflammatory disorder;
 KW angiogenic disorder; immunological disorder.

XX OS Homo sapiens.

XX PN US2002001587-A1.

XX PD 03-JAN-2002.

XX PF 16-MAR-2001; 2001US-00811123.

XX PR 16-MAR-2000; 2000US-0189844P.

XX PR 05-OCT-2000; 2000US-0238327P.

XX PA (ERIC/) ERICKSON S.

XX PA (SCHW/) SCHWALL R.

XX PA (SLIW/) SLIWKOWSKI M.

XX PI Erickson S, Schwall R, Sliwkowski M;

XX DR WPI; 2002-163686/21.

XX DR N-PSDB; ABK14058.

XX PT Treating tumor characterized by overexpression of epidermal growth factor
 XX receptor, ErbB or cancer in mammal, comprises administering anti-ErbB
 XX antibody-maytansinoid conjugate to the mammal.

XX PS Example 3; Fig 7; 93pp; English.

XX CC The invention relates to treating a tumour in a mammal, where the tumour
 CC is characterised by the overexpression of an epidermal growth factor
 CC receptor (ErbB) and does not respond or responds poorly, to treatment
 CC with an anti-ErbB antibody, comprising administering to the mammal an
 CC anti-ErbB antibody-maytansinoid conjugate. The method is useful for
 CC treating cancer or tumours of the breast, ovary, stomach, endometrium,
 CC salivary gland, lung, kidney, colon, colorectum, thyroid, pancreas,
 CC prostate and bladder, preferably breast cancer. The breast cancer is a
 CC metastatic breast cancer or an aggressive form of metastatic breast
 CC cancer which overexpresses ErbB2. The method is also useful for treating
 CC neuronal, glial, astrocytal, hypothalamic, glandular, macrophagal,
 CC epithelial, stromal, blastocoelec, inflammatory, angiogenic and
 CC immunological disorders. This sequence represents the human HER2 (ErbB2)
 CC polypeptide of the invention

XX SQ Sequence 1255 AA;

Query Match

100.0%; Score 6694; DB 5; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QVCTGTDMLRLPASBETHLDMLRLHYLQGCQVQGNLELTYLTNLSLFLQDIOEQVQY 60
 |||||
 DB 24 QVCTGTDMLRLPASBETHLDMLRLHYLQGCQVQGNLELTYLTNLSLFLQDIOEQVQY 83
 |||||
 QY 61 VLIHNOVROVPLQRLRIVRGTOQLFDNVALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
 |||||
 DB 84 VLIHNOVROVPLQRLRIVRGTOQLFDNVALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143
 |||||
 QY 121 SLTEILKGGVLIQORNPOLCYQDTILWKDIFHKNNQALALTIDNRRACHPCSPMCKGSR 180
 |||||
 DB 144 SLTEILKGGVLIQORNPOLCYQDTILWKDIFHKNNQALALTIDNRRACHPCSPMCKGSR 203
 |||||
 QY 181 CWGESSEDCOSLRTTVACGACGACRCKGPLPTDCCHQCAAGCTGPKHSDCLACLFHNHSGI 240
 |||||
 DB 204 CWGESSEDCOSLRTTVACGACGACRCKGPLPTDCCHQCAAGCTGPKHSDCLACLFHNHSGI 263
 |||||
 QY 241 CELHCPALVTYNTDTTPEMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPLNHQEVT 300
 |||||
 DB 264 CELHCPALVTYNTDTTPEMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPLNHQEVT 323
 |||||
 QY 301 AEDGTQCEKCKSPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 360
 |||||
 DB 324 AEDGTQCEKCKSPCARVCYGLGMEHLREVRVAVTSANIQEFAGCKKIFGSLAFLPESFDG 383
 |||||
 QY 361 DPASNTAPLOPEQLOVFETILEEITGYLISAWPDSLPLDSVFQNLQVIRGIRLHNGAYS 420
 |||||
 DB 384 DPASNTAPLOPEQLOVFETILEEITGYLISAWPDSLPLDSVFQNLQVIRGIRLHNGAYS 443
 |||||
 QY 421 TLQGLGISWGLRSRLRELSGLALIHNNTHLCFVHTVPWDQLFRNPHQALLHTANREDE 480
 |||||
 DB 444 TLQGLGISWGLRSRLRELSGLALIHNNTHLCFVHTVPWDQLFRNPHQALLHTANREDE 503
 |||||
 QY 481 CVGEGLAHQLCARGHCWGPGPTQCVNCSQFLRGQCEVEECRVLQGLPREYVVARHCLPC 540
 |||||
 DB 504 CVGEGLAHQLCARGHCWGPGPTQCVNCSQFLRGQCEVEECRVLQGLPREYVVARHCLPC 563
 |||||
 QY 541 HPECQPNQSVTCFGEADQCVACAHYKDPFPCVPCARCPGSKDPLSYMPWKPDDEGAC 600
 |||||
 DB 564 HPECQPNQSVTCFGEADQCVACAHYKDPFPCVPCARCPGSKDPLSYMPWKPDDEGAC 623
 |||||
 QY 601 QPCPNCTHSCVDLDDKGPAPAEORASPLTSIVSAVVGILLVVLGVVFGILIKRQOKIR 660
 |||||
 DB 624 QPCPNCTHSCVDLDDKGPAPAEORASPLTSIVSAVVGILLVVLGVVFGILIKRQOKIR 683
 |||||
 QY 661 KYTMRLLQETELVEPLTPSGAMPNOAQMRLKETELRKVKYVLGSGAFGTYYKGIWIPDG 720
 |||||
 DB 684 KYTMRLLQETELVEPLTPSGAMPNOAQMRLKETELRKVKYVLGSGAFGTYYKGIWIPDG 743
 |||||
 QY 721 ENVKIPVAIKVLRNTSPKANKELDEAYVMAGVSPYVSRLLIGICLTSTVQLVTQLMPY 780
 |||||
 DB 744 ENVKIPVAIKVLRNTSPKANKELDEAYVMAGVSPYVSRLLIGICLTSTVQLVTQLMPY 803
 |||||
 QY 781 GCLLDHVNRGRGLGSQDLLNWCQIAKMSYLEDLVLRDLAARNVLKSPNHVKITD 840
 |||||
 DB 804 GCLLDHVNRGRGLGSQDLLNWCQIAKMSYLEDLVLRDLAARNVLKSPNHVKITD 863
 |||||
 QY 841 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVYVWELMTFGAKPY 900
 |||||
 DB 864 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVYVWELMTFGAKPY 923
 |||||
 QY 901 DGPAREIPDLLEKGERLPQPPCTTIDVNMVWKMWIDSECEPRPRELVSERMRADP 960
 |||||
 DB 924 DGPAREIPDLLEKGERLPQPPCTTIDVNMVWKMWIDSECEPRPRELVSERMRADP 983
 |||||
 QY 961 QRFVVIQNEDLGPASPLDSTFYSLLEDDDMGLVDAAEYLVFQQGFCCPDPAAGAGMW 1020
 |||||
 DB 984 QRFVVIQNEDLGPASPLDSTFYSLLEDDDMGLVDAAEYLVFQQGFCCPDPAAGAGMW 1043
 |||||
 QY 1021 HHRHRSSTRSGGDLTLGLPESEBAPRSPAPSEAGSDVDFDGLDMGAAGKQLSLPT 1080
 |||||

Db 1044 HHRSSSTRSGGDLTLGLEPSEBEAPRSLAPSEGAGSDVFDGLGMAAKGLQSLPT 1103
 QY 1081 HDSPLQRYSEDTVPPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA 1140
 Db 1104 HDSPLQRYSEDTVPPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA 1163
 QY 1141 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAAPQHPHPPAFSADFNLVYW 1200
 Db 1164 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAAPQHPHPPAFSADFNLVYW 1223
 QY 1201 DQPPPERGAPPSTFKGTPTAENPEYLGLDVVP 1232
 Db 1224 DQPPPERGAPPSTFKGTPTAENPEYLGLDVVP 1255

RESULT 7

ABR47447
 ID ABR47447 standard; protein; 1255 AA.
 XX ABR47447;
 XX 12-JUN-2003 (first entry)
 XX Breast cancer associated protein sequence SEQ ID NO:126.
 XX Human; breast cancer; cytostatic; gene therapy.
 XX Homo sapiens.

W02003004989-A2.

16-JAN-2003.

21-JUN-2002; 2002WO-US019669.

21-JUN-2001; 2001US-0299887P.

27-JUN-2001; 2001US-0301572P.

18-JUL-2001; 2001US-0306501P.

25-SEP-2001; 2001US-0325002P.

05-MAR-2002; 2002US-0362585P.

14-MAY-2002; 2002US-0380391P.

(MILL-) MILLENIUM PHARM INC.

XX Lillie J, Gannavarapu M, Glatt K, Hoersh S, Kamatkar S,
 PI Mertens M, Monahan JE, Myer V, Wang Y, Xu Y, Zhao X, Meyers RE;
 PI Baat RC, Hortobagyi GN, Pusztai L, Meric F, Sahin A, Mills GB;

XX WPI; 2003-210381/20.

DR N-PSDB; ACC50139.

PT Breast cancer diagnosis or treatment by comparing the level of expression
 PT of a marker in a patient sample with that in the control non-breast
 PT cancer sample.

PS Claim 1; SEQ ID NO 126; 128pp; English.

XX The present invention describes a method for assessing whether a patient
 CC is afflicted with breast cancer. The method comprises comparing the level
 CC of expression of a marker (gene/polypeptide see ACC50076 to ACC50334 and
 CC ABR47386 to ABR47632) in a patient sample and the normal level of
 CC expression of the marker in a control non-breast cancer sample, where a
 CC significant increase in the level of expression of the marker in the
 CC patient sample and the normal level is an indication that the patient is
 CC afflicted with breast cancer. The breast cancer associated sequences from
 CC the present invention have cytostatic activities and can be used in gene
 CC therapy. The method is useful for diagnosing and treating breast cancer.
 CC N.B. The sequence data for this patent did not form part of the printed
 CC specification, but was obtained in electronic format directly from WIPO
 CC at ftp.wipo.int/pub/published_pct_sequences

XX Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 6; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QVCTGDMKRLPASPETHLDMLRHLVQGCQVQGNLELTYLPTNASTLSFLQDIOEVQGY 60
 Db 24 QVCTGDMKRLPASPETHLDMLRHLVQGCQVQGNLELTYLPTNASTLSFLQDIOEVQGY 83
 QY 61 VLIAHNQVRQPLQRLRIVRGTOQLFEDNYALAVLDNGDPLNNTTPTVTCASPGGLRELQRL 120
 Db 84 VLIAHNQVRQPLQRLRIVRGTOQLFEDNYALAVLDNGDPLNNTTPTVTCASPGGLRELQRL 143
 QY 121 SLTEILKGGVLIQRNPQLCYODTILWKDIFHNKQALATLIDTNRSRACHPCSPMKGSR 180
 Db 144 SLTEILKGGVLIQRNPQLCYODTILWKDIFHNKQALATLIDTNRSRACHPCSPMKGSR 203
 QY 181 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
 Db 204 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
 QY 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQSVT 300
 Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQSVT 323
 QY 301 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIOEPAGCKKIFGSLAFIPESPDG 360
 Db 324 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIOEPAGCKKIFGSLAFIPESPDG 383
 QY 361 DPASNTAPLOEQLOVFTLEETITGYLYISAWPDSLPDLVFNQNLQVIRGILHNGAYSL 420
 Db 384 DPASNTAPLOEQLOVFTLEETITGYLYISAWPDSLPDLVFNQNLQVIRGILHNGAYSL 443
 QY 421 TLQGLGISWGLRLSRLGSLALIHNNTHLCFVHTVPDQDLFRNPHQALLHTANRPEDE 480
 Db 444 TLQGLGISWGLRLSRLGSLALIHNNTHLCFVHTVPDQDLFRNPHQALLHTANRPEDE 503
 QY 481 CVGEGGLACHOLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCLIPC 540
 Db 504 CVGEGGLACHOLCARGHCWGPPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAHCLIPC 563
 QY 541 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVACRCPGKPDLSYMPIWKFPDEGAC 600
 Db 564 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVACRCPGKPDLSYMPIWKFPDEGAC 623
 QY 601 QPCPNCTHSCVDLDDKGCAPRORASPLTSIVSAVVGLLVVLGVFGILLIKRQOKIR 660
 Db 624 QPCPNCTHSCVDLDDKGCAPRORASPLTSIVSAVVGLLVVLGVFGILLIKRQOKIR 683
 QY 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKYLGSGAFGTVYKGIWIPDG 720
 Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKYLGSGAFGTVYKGIWIPDG 743
 QY 721 ENVKIPVAIKVIRENTSPKANKEILDEAYWAGVCSPPVSRLLGLCLSTVQLVTLMPY 780
 Db 744 ENVKIPVAIKVIRENTSPKANKEILDEAYWAGVCSPPVSRLLGLCLSTVQLVTLMPY 803
 QY 781 GCLLDHVRNCRGLSQDLLNWCMIKAGMSYLEDLVLRDIAARNVLKSPNHVKITD 840
 Db 804 GCLLDHVRNCRGLSQDLLNWCMIKAGMSYLEDLVLRDIAARNVLKSPNHVKITD 863
 QY 841 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900
 Db 864 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923
 QY 901 DGIPAREIPDLLEKGERLPQPPICIDVYIMVWKWMDIDSECRPRELVSFSRWARDP 960
 Db 924 DGIPAREIPDLLEKGERLPQPPICIDVYIMVWKWMDIDSECRPRELVSFSRWARDP 983
 QY 961 QRFVWIONEDLGPASPLDSTFYRSLLDDMDGLVDAEYLVPPQGGFFCFDPAAGAGMV 1020
 Db 984 QRFVWIONEDLGPASPLDSTFYRSLLDDMDGLVDAEYLVPPQGGFFCFDPAAGAGMV 1043
 QY 1021 HHRSSSTRSGGDLTLGLEPSEBEAPRSLAPSEGAGSDVFDGLGMAAKGLQSLPT 1080

Db 1044 HHRSSSTRSGGDLTLGLSPSEEAAPRSLAPSEAGSDVDFCDLGMGAAGLQSLPT 1103
Qy 1081 HDPSPLOKYSDDPTVPLPSETDGVVAPLTCSPQPEYVNPQDVRPQPSREGPLPAARPA 1140
Db 1104 HDPSPLOKYSDDPTVPLPSETDGVVAPLTCSPQPEYVNPQDVRPQPSREGPLPAARPA 1163
Qy 1141 GATLERAKTSLSPGKNGVVKDVFAGGAVENPEYLTPOGGAAPHPHPAFSPAFDNLYYW 1200
Db 1164 GATLERAKTSLSPGKNGVVKDVFAGGAVENPEYLTPOGGAAPHPHPAFSPAFDNLYYW 1223
Qy 1201 DODPPERGAPSTFKGTPTAENPEYLGIDVVP 1232
Db 1224 DODPPERGAPSTFKGTPTAENPEYLGIDVVP 1255

RESULT 8
ABP74708
ID ABP74708 standard; protein; 1255 AA.
XX AC
XX AC
XX AC
DT 03-FEB-2003 (first entry)
XX Human Her2/Neu protein SEQ ID NO:594.
XX Human; epitope; vaccine; immunotherapeutic; cytostatic; immunogenicity;
KW T cell; chromosome 17q21-q22.
XX Homo sapiens.
XX WO200281646-A2.
XX 17-OCT-2002.
XX 04-APR-2002; 2002WO-US011101.
XX 06-APR-2001; 2001US-0282211P.
PR 07-NOV-2001; 2001US-0337017P.
PR 07-MAR-2002; 2002US-0363210P.
XX (CTLI-) CTL IMMUNOTHERAPIES CORP.
XX Simard JDL, Diamond DC, Liu L, Xie Z;
XX WPI; 2003-067518/06.
DR N-PSDB; ABQ83856.
XX Novel epitopes useful as vaccines, comprises peptides or nucleic acid
PT encoding the peptides, that are useful epitopes of target-associated
PT antigens.
XX Claim 1; Page 175; 352pp; English.

XX The present invention describes an isolated epitope (I) and an epitope
CC cluster. Also described is a vaccine or immunotherapeutic composition
CC (VC) comprising (I). (I) has cytostatic activity. VC is useful for
CC treating an animal, by administering to an animal the vaccine or
CC immunotherapeutic composition. VC is also useful for evaluating
CC immunogenicity of a vaccine or immunotherapeutic composition, by
CC administering VC to an HLA-transgenic animal and evaluating
CC immunogenicity based on a characteristic of the animal, or by in vitro
CC primary stimulation of a T cell and evaluating immunogenicity. (I) is
CC useful for determining specific T cell frequency, by contacting T cells
CC with a MHC-peptide complex, and further comprises ELISPOT analysis,
CC limiting dilution analysis, flow cytometry, in situ hybridisation and/or
CC polymerase chain reaction (PCR). ABQ83843 to ABQ83858 and ABP74128 to
CC ABP74713 represent sequences used in the exemplification of the present
CC invention
XX Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 QVCTGTDMLRLPASBETHLDMLRLHLYQGCVQVQGNLELYLPTNASLSFLQDIOEQVQY 60
Db 24 QVCTGTDMLRLPASBETHLDMLRLHLYQGCVQVQGNLELYLPTNASLSFLQDIOEQVQY 83
Qy 61 VLIAHNQVROVPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTSAGSPGGLREQLR 120
Db 84 VLIAHNQVROVPLQRLIRVRGTQLFEDNYALAVLDNGDPLNNTTPTVTSAGSPGGLREQLR 143
Qy 121 SLTEILKGGVLIQRNPOLCYQDTILMKDIFHKNNQLALTLIDNRSRACHPCSPCKGSR 180
Db 144 SLTEILKGGVLIQRNPOLCYQDTILMKDIFHKNNQLALTLIDNRSRACHPCSPCKGSR 203
Qy 181 CWGESSEDCQSLTRTYCAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCQSLTRTYCAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
Qy 241 CELHCPALVTYNTDTFESMENPEGRVTFGASCVTACPYNYLSTDVGSCTLVCPHNOEVT 300
Db 264 CELHCPALVTYNTDTFESMENPEGRVTFGASCVTACPYNYLSTDVGSCTLVCPHNOEVT 323
Qy 301 AEDGTQCEKCKPCARVCYGLQMEHLREVRVTSANIOBFAGCKIFGSLAFLPESFDG 360
Db 324 AEDGTQCEKCKPCARVCYGLQMEHLREVRVTSANIOBFAGCKIFGSLAFLPESFDG 383
Qy 361 DPASNTAPLOPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 420
Db 384 DPASNTAPLOPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 443
Qy 421 TLQGLGISWLGSLRSLRELGSGLALIHNNTHLCFVHTVPWDQLPFNPHQALLHTANRPEDE 480
Db 444 TLQGLGISWLGSLRSLRELGSGLALIHNNTHLCFVHTVPWDQLPFNPHQALLHTANRPEDE 503
Qy 481 CVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQCEVEECRVLQGLPREYVNAHCLPC 540
Db 504 CVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQCEVEECRVLQGLPREYVNAHCLPC 563
Qy 541 HPCEQPQNGSVTCFGEADQCVACAHYKDPFPCVACRCPGSKPDLNMPYKWPDEGAC 600
Db 564 HPCEQPQNGSVTCFGEADQCVACAHYKDPFPCVACRCPGSKPDLNMPYKWPDEGAC 623
Qy 601 QPCPINCTHSCVDLDDKGCPEAORASPLTSIVSAVVGILLVVLGVVFGILLIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGCPEAORASPLTSIVSAVVGILLVVLGVVFGILLIKRQOKIR 683
Qy 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKYKVLGSGAFGTYYKGIWIPDG 720
Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKYKVLGSGAFGTYYKGIWIPDG 743
Qy 721 ENVKIPVAIKVLENTSPKANKSILDEAYVMAGVSPYVSRLLGICLTSTVQLTQMPY 780
Db 744 ENVKIPVAIKVLENTSPKANKSILDEAYVMAGVSPYVSRLLGICLTSTVQLTQMPY 803
Qy 781 GCLLDHVRENRLGSLQDILLNWCQAKGMSYLEDVRLVHRDLAARNLVKSPNHVKITD 840
Db 804 GCLLDHVRENRLGSLQDILLNWCQAKGMSYLEDVRLVHRDLAARNLVKSPNHVKITD 863
Qy 841 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVYVWELMTFGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVPKWMALLESILRRRFTHQSDVMSYGVYVWELMTFGAKPY 923
Qy 901 DGIIPAREIPDLLEKGRRLPQPPCTTDVVMYKWMIDSECPRELYSESRWARDP 960
Db 924 DGIIPAREIPDLLEKGRRLPQPPCTTDVVMYKWMIDSECPRELYSESRWARDP 983
Qy 961 QRFVVIQNEDLGPASPLDSTFYRSLLDDDDMGDLVDAEYLVQOQGFCCPDPAAGAGMV 1020
Db 984 QRFVVIQNEDLGPASPLDSTFYRSLLDDDDMGDLVDAEYLVQOQGFCCPDPAAGAGMV 1043
Qy 1021 HHRHRSSTRSGGDLTLGLSPSEEAAPRSLAPSEAGSDVDFCDLGMGAAGLQSLPT 1080

1044	DB	1044	HHRRSSSTRSGGDLTLGLEPSEEAAPRSPLAPSEGAGSVDFGDLGMGAAGLQSLPT	1100
1081	QY	1081	HDPSPLQRYSEDPTVLPGETDGYVAPLTCSQPQYVNVQPDVRQPQSPREGPLPAARPA	1140
1104	DB	1104	HDPSPLQRYSEDPTVLPGETDGYVAPLTCSQPQYVNVQPDVRQPQSPREGPLPAARPA	1163
1141	QY	1141	GATLERAKTILSPGKNGVVKDVFAFGAVENPEYILTFQGGAAAPQHPHPPAFSPAFDNLYYW	1200
1164	DB	1164	GATLERAKTILSPGKNGVVKDVFAFGAVENPEYILTFQGGAAAPQHPHPPAFSPAFDNLYYW	1223
1201	QY	1201	DODPPERGAPPSTFKGTPTAENPEYILGLDVPV	1232
1224	DB	1224	DODPPERGAPPSTFKGTPTAENPEYILGLDVPV	1255
RESULT 9				
IID	AAE38390	AAE38390	standard; protein; 1255 AA.	
AC	AAE38390;			
DT	20-NOV-2003	(first entry)		
XX	Human c-erbB2 protein.			
XX	ErbB2; HER2; neu; breast cancer; protein therapy; human.			
XX	Homo sapiens.			
OS				
Key	Location/Qualifiers			
FT	1..653			
FT	/note= "Extracellular domain"			
XX	WO2003061559-A2.			
PN	31-JUL-2003.			
PD	15-OCT-2002; 2002WO-US032947.			
XX	12-OCT-2001; 2001US-0329183P.			
PR	(UYVE-) UNIV VERMONT & STATE AGRIC COLLEGE.			
XX	Krag DN, Pero SC, Oligino L;			
PA	WPI: 2003-671426/63.			
XX	N-PSDB; AAD58073.			
PT	A composition for diagnosing, preventing or treating disorders			
PT	characterized by ErbB2 overexpression (e.g. breast cancer) comprises an			
PT	ErbB2 binding peptide that binds specifically to the extracellular domain			
XX	of ErbB2.			
PS	Disclosure; Page 95-100; 106pp; English.			
XX	The present invention relates to peptides and peptidomimetics that bind			
CC	to the extracellular domain of ErbB2 (also known as HER2 or neu).			
CC	Sequences of the invention are useful in the diagnosis, prevention and			
CC	treatment of disorders characterised by ErbB2 overexpression (e.g. breast			
CC	cancer). The invention is also useful in protein therapy. The present			
CC	sequence is human c-erbB2 protein			
XX	Sequence 1255 AA;			
XX	Query Match 100.0%; Score 6694; DB 6; Length 1255;			
XX	Best Local Similarity 100.0%; Pred. No. 0;			
XX	Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;			
QY	1	QVCTGTDWKLRLPASPETHLDMRLHYGCGVQVQGNLETLVLPINASLSFLQDIQEVQY	60	
DB	24	QVCTGTDWKLRLPASPETHLDMRLHYGCGVQVQGNLETLVLPINASLSFLQDIQEVQY	83	
QY	61	VLIAHNQVRQVPLQBLRIVRGTLQGFEDNYALAVLNDGDFLNNTPVTGASPGGLRELQR	120	

Db 1164 GATLERAKTSLPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPPPAFSPAFDNLYYW 1223

Qy 1201 DQDPPERGAPSTFKGTPTAENPEYLGLDVVP 1232

Db 1224 DQDPPERGAPSTFKGTPTAENPEYLGLDVVP 1255

RESULT 10

ID ADA38143

XX ADA38143 standard; protein; 1255 AA.

AC ADA38143;

XX 20-NOV-2003 (first entry)

XX Human erb-B protein, a target of a therapeutic nanostructure.

XX implantable microscopic device; nanostructure; ligand; gout; bone injury;

XX cancer; HIV; p1; p2; human; erb-B.

XX Homo sapiens.

XX WO2003053357-A2.

XX 03-JUL-2003.

XX 18-DEC-2002; 2002WO-US040678.

XX 19-DEC-2001; 2001US-0342894P.

XX (WILK-) WILK PATENT DEV CORP.

XX Stirlb RC, Snead ML, Xu J, Vicetta ES, Wilk PJ;

XX WPI; 2003-569175/53.

XX Diagnostic or therapeutic method involves inserting medical devices

PT including nanostructures provided with ligand into patient, and attaching

PT nanostructures through ligand to predetermined target structure inside

PT patient.

XX Example 4; Page 14-15; 36pp; English.

XX This invention relates to a novel medical method comprising providing an

CC implantable microscopic device including a nanostructure provided with a

CC ligand for effectively coupling the nanostructure to a predetermined

CC chemical or molecular site. Specifically, the microscopic device is

CC directly implanted into patients at predetermined sites, and on reaching

CC the target site the nanostructure is activated to perform a preselected

CC medical diagnostic or therapeutic function. Accordingly, the present

CC invention describes using this method for the treatment of various

CC illnesses including gout whereby the target is a urea deposit that can be

CC disrupted by activation of the nanostructure, as well as bone injuries

CC and cancer. Furthermore, the target can consist of a microorganism

CC containing a strand of viral DNA, such that heating the nanostructure can

CC destroy the microorganism, which in turn can be used therapeutically to

CC treat HIV patients. This polypeptide sequence is the human erb-B protein

CC that is over expressed in human breast tumour cells and therefore acts as

CC target for a nanostructure of the invention.

XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 6; Length 1255;

Best Local Similarity 100.0%; Pred. No. 0;

Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QVCTGTDMLKRLPASPEHLDMLRHLHYQGCVVQGNLELYLPTNASLSFLQDIQEVQY 60

Db 24 QVCTGTDMLKRLPASPEHLDMLRHLHYQGCVVQGNLELYLPTNASLSFLQDIQEVQY 83

Qy 61 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQRL 120

Db 84 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPVTGASPGGLRELQRL 143

Qy 121 SLTEILKGGVLIQORNPOLCYQDITLWKDIFHKNNQALALTIDNRSRACHPCSPMCKGSR 180

Db 144 SLTEILKGGVLIQORNPOLCYQDITLWKDIFHKNNQALALTIDNRSRACHPCSPMCKGSR 203

Qy 181 CWGESSEDCQSLTRTVTCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLFHFNHSGI 240

Db 204 CWGESSEDCQSLTRTVTCAGGCARCKGPLPTDCCHEQCAAGCTGPKHSDCLACLFHFNHSGI 263

Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTLVCPLHNOEVT 300

Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVSGCTLVCPLHNOEVT 323

Qy 301 AEDGTORCEKCKPCARVCYGLGMEHLREVRVTSANIQEFACKKIFGLSFLAPFESFDG 360

Db 324 AEDGTORCEKCKPCARVCYGLGMEHLREVRVTSANIQEFACKKIFGLSFLAPFESFDG 383

Qy 361 DPASNTAPLOEQLOVFETLEEITGYLYISANPDSLPLDSVFQNLQVIRGRIILHNGAYSL 420

Db 384 DPASNTAPLOEQLOVFETLEEITGYLYISANPDSLPLDSVFQNLQVIRGRIILHNGAYSL 443

Qy 421 TLQGLGISWLGSLRLSGSLALIHNNTHLCFVHTVPMQDLFRNPHQALLHTANRPEDE 480

Db 444 TLQGLGISWLGSLRLSGSLALIHNNTHLCFVHTVPMQDLFRNPHQALLHTANRPEDE 503

Qy 481 CVGEGLAHQLCARGHCWGPGPTQCVCNCSQFLRGQECVBEQVLCGLPREYVVARHCLPC 540

Db 504 CVGEGLAHQLCARGHCWGPGPTQCVCNCSQFLRGQECVBEQVLCGLPREYVVARHCLPC 563

Qy 541 HPECQPNQSGSVTCFGEADQCVACAHYKDPFFCVARCPGKPDLSVMPWKFPDEBEGAC 600

Db 564 HPECQPNQSGSVTCFGEADQCVACAHYKDPFFCVARCPGKPDLSVMPWKFPDEBEGAC 623

Qy 601 QPCPINCTHSCVDLDDKGPABEQRASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 660

Db 624 QPCPINCTHSCVDLDDKGPABEQRASPLTSIVSAVVGILLVVLGVVFGVILIKRQOKIR 683

Qy 661 KYTMRLLQETELVEPLTPSGAMPNQAOMRIKELKTELKVKVLGSGAFGVYKGIWIPDG 720

Db 684 KYTMRLLQETELVEPLTPSGAMPNQAOMRIKELKTELKVKVLGSGAFGVYKGIWIPDG 743

Qy 721 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPYVSRLLGICLITSTVQLVTQLMPY 780

Db 744 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPYVSRLLGICLITSTVQLVTQLMPY 803

Qy 781 GCLLDHVRENRLGSLQDLNWCMIQAKGMSYLEDVRLVHRDLAARNVLKSPNHVKITD 840

Db 804 GCLLDHVRENRLGSLQDLNWCMIQAKGMSYLEDVRLVHRDLAARNVLKSPNHVKITD 863

Qy 841 FGLARLLDIDETEHADGKVPKKNWALSILRRRTHQSDVMSYGVYVWELMTFGAKPY 900

Db 864 FGLARLLDIDETEHADGKVPKKNWALSILRRRTHQSDVMSYGVYVWELMTFGAKPY 923

Qy 901 DGIIPAREIPDLLEKGERLQPPICITDVMYMWKMWIDSECRPRFRELVSERWARDP 960

Db 924 DGIIPAREIPDLLEKGERLQPPICITDVMYMWKMWIDSECRPRFRELVSERWARDP 983

Qy 961 QRFVVIQNEBGLPASPLDSTFYRSLLDDEDDMGDLVDABEYLVPOQGFCDPAPGAGMW 1020

Db 984 QRFVVIQNEBGLPASPLDSTFYRSLLDDEDDMGDLVDABEYLVPOQGFCDPAPGAGMW 1043

Qy 1021 HHRHRSSTRSQGGDLTLGLEPSEEAEPSPAPSEAGSDVDFDGLGMAAKGLOSPLT 1080

Db 1044 HHRHRSSTRSQGGDLTLGLEPSEEAEPSPAPSEAGSDVDFDGLGMAAKGLOSPLT 1103

Qy 1081 HPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1140

Db 1104 HPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1163

Qy 1141 GATLERAKTSLPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPPPAFSPAFDNLYYW 1200

Db 1164 GATLERAKTSLPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPPPAFSPAFDNLYYW 1223

QY 1201 DQPPPERGAPPSTFKGPTAENPEYLGLDVVP 1232
Db 1224 DQPPPERGAPPSTFKGPTAENPEYLGLDVVP 1255

RESULT 11
ADA37255
ID ADA37255 standard; protein; 1255 AA.
XX ADA37255;
AC
CC
DT 20-NOV-2003 (first entry)
XX
DE Human ErbB2 amino acid sequence SEQ ID NO:5.
XX
KW crystal; epithelial growth factor; EGF;
KW epithelial growth factor receptor; EGFR; cytostatic; hepatotropic;
KW antitumor; antidiabetic; dermatological; antiparkinsonian; fungicide;
KW cancer; cancer proliferation; liver function disorder; ulcer;
KW Parkinson's disease; bone resorption disorder; ringworm; human;
KW protein co-ordinate data; ErbB2.
XX
OS Homo sapiens.
XX
XX W02003066677-A1.
PN
XX
XX 14-AUG-2003.
PD
XX
XX 12-SEP-2002; 2002WO-JP009332.
PF
XX
XX 05-FEB-2002; 2002JP-00028780.
PR
XX
XX (NISC-) JAPAN SCI & TECHNOLOGY CORP.
PA (RIKE) RIKEN KK.
PA (MOCH) MOCHIDA PHARM CO LTD.
XX
XX Yokoyama S, Ogiso H, Shirouzu M, Nureki O, Ishitani R, Saito K;
PI Matsusue T, Nakao N, Muramatsu H, Shinozaki M;
PI
XX WPI; 2003-627750/59.

Crystalline complex of epithelial growth factor with its receptor for design of ligands and antibodies to the receptor for treatment of ulcers, cancer and Parkinson's disease.

Example 4; Page 442-450; 489pp; Japanese.

The present invention describes crystals of a complex (C) of epithelial growth factor (EGF) with epithelial growth factor receptor (EGFR), containing a dimer of a complex of EGF with EGFR in the molar ratio 1:1. Also described: (1) preparation of EGFR which can be crystallised, in which recombinant EGFR is prepared using Lec8 cells and then deglycosylated using glycosidase; (2) preparation of a complex of EGFR with EGF or with another EGFR activity regulator (I), in which crystallisable EGFR is contacted with EGF or (I); (3) screening potential (1) by determining the fit of the 3D structure of (1) to that of the EGFR complex; (4) substances obtained by the screening method for use as agonists and antagonists of EGFR; (5) screening EGF or EGFR mutants having an amino acid mutation in the EGFR dimerisation region or in the EGF-EGFR interaction site, by comparing their 3D structure to that of EGFR; (5) design of epitopes using the 3D structure of the EGF-EGFR complex; (6) preparation of anti-EGF or anti-EGFR antibodies using the epitopes identified; (7) anti-EGF or anti-EGFR antibodies prepared by this method; and (8) polypeptides and their salts containing all or part of the amino acid sequence of the EGFR dimerisation site. (C) has cytostatic, hepatotropic, antitumor, antidiabetic, dermatological, antiparkinsonian and fungicide activities. (C) can be used in the identification of agonists and antagonists of EGFR for use in the treatment and prevention of cancer and cancer proliferation, liver function disorders, ulcers (including stomach ulcer, skin ulcer and ulcer arising from diabetic complications), Parkinson's disease, bone resorption disorders and ringworm. The present sequence represents a human ErbB2 amino acid sequence, which is used in the exemplification of

CC the present invention.
XX Sequence 1255 AA;
SQ

Query Match 100.0%; Score 6694; DB 7; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QVCTGTDKMLRLPASPETHLDMLRHLRYQGCQVQGNLELTLYLPTNASTSFLQDIOEVQY 60
Db 24 QVCTGTDKMLRLPASPETHLDMLRHLRYQGCQVQGNLELTLYLPTNASTSFLQDIOEVQY 83
QY 61 VLIAHNOVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQRL 120
Db 84 VLIAHNOVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQRL 143
QY 121 SLTEILKGGVLIQRNPQLCYQDTILWKDI FHKNNQALTLIDTNRSRACHPCSPMCKGSR 180
Db 144 SLTEILKGGVLIQRNPQLCYQDTILWKDI FHKNNQALTLIDTNRSRACHPCSPMCKGSR 203
QY 181 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 263
QY 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQEV 300
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLVCPLNQEV 323
QY 301 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANTIOEFAGCKKIFGSLAFLPESFDG 360
Db 324 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANTIOEFAGCKKIFGSLAFLPESFDG 383
QY 361 DPASNTAPLOPELOQVETLEITGILYISAWPDSLPDLSVFNQLVGRILHNGAYSL 420
Db 384 DPASNTAPLOPELOQVETLEITGILYISAWPDSLPDLSVFNQLVGRILHNGAYSL 443
QY 421 TLQGLIGISWLGRLSRLGSLGLLHNTLHLCFVHTVPWDQLFRNPHQALLHTANRPEDE 480
Db 444 TLQGLIGISWLGRLSRLGSLGLLHNTLHLCFVHTVPWDQLFRNPHQALLHTANRPEDE 503
QY 481 CVGEGLACHQLCARGHCWGPPTQVNCQSFRLRGQECVEECRVLQGLPREYVNAHCLP 540
Db 504 CVGEGLACHQLCARGHCWGPPTQVNCQSFRLRGQECVEECRVLQGLPREYVNAHCLP 563
QY 541 HPECOPQNGSVTCFGEADQCVACAHYKDPPEPCVACPSGVKPDLSYMPIWKFPEEGAC 600
Db 564 HPECOPQNGSVTCFGEADQCVACAHYKDPPEPCVACPSGVKPDLSYMPIWKFPEEGAC 623
QY 601 QPCPINCTHSCVDLDDKGPAPQASPLTISIVSAVVGILLVVLGVVFGILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGPAPQASPLTISIVSAVVGILLVVLGVVFGILIKRQOKIR 683
QY 661 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 720
Db 684 KYTMRLLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVLGSGAFGVYKGIWIPDG 743
QY 721 ENVKIPVAIKVRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVQLMPEY 780
Db 744 ENVKIPVAIKVRENTSPKANKEILDEAYVMAGVSPYVSRLLGICLTSTVOLVQLMPEY 803
QY 781 GCLLDHVRNRLGRLSQDILLNCMOIAGKMSYLEVDRLVHRDLAARNVLKSPNFKITD 840
Db 804 GCLLDHVRNRLGRLSQDILLNCMOIAGKMSYLEVDRLVHRDLAARNVLKSPNFKITD 863
QY 841 FGLARLLDIDETEHADGKGVPIKWALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 900
Db 864 FGLARLLDIDETEHADGKGVPIKWALESILRRRFTHQSDVMSYGVTVWELMTGAKPY 923
QY 901 DGPAREIPDLAEKERLPQPICTIDVYIMVKWCWMDISECRPRELVSFSESRMARDP 960
Db 924 DGPAREIPDLAEKERLPQPICTIDVYIMVKWCWMDISECRPRELVSFSESRMARDP 983
QY 961 QRFVVIQNEBGLGPASPLDSTFYRSLLEDMDGLVDAEYLPVQPGFFCPCDPAPAGGMV 1020

Db 984 QRFVVIQNEGLGASPLDSTFYRSLLEDMDGLVDAEYLVQCGFFCDPAPGAGMV 1043
 QY 1021 HHRHRSSTSGGDLTLGLEPSEERAPRPLAPSEGAGSDVDGDLGMAAGKLSLPT 1080
 Db 1044 HHRHRSSTSGGDLTLGLEPSEERAPRPLAPSEGAGSDVDGDLGMAAGKLSLPT 1103
 QY 1081 HDPSPLOQYSEDPTVPLPSETDGTGVAPLTCSPOPEYVQNPQDPVPQPPSPREGPLPAARPA 1140
 Db 1104 HDPSPLOQYSEDPTVPLPSETDGTGVAPLTCSPOPEYVQNPQDPVPQPPSPREGPLPAARPA 1163
 QY 1141 GATLERAKTSLSPKNGVYKVDVFAFGGAVENPEVILTPQGGAAPOPHPPAPSPAFDNLYYW 1200
 Db 1164 GATLERAKTSLSPKNGVYKVDVFAFGGAVENPEVILTPQGGAAPOPHPPAPSPAFDNLYYW 1223
 QY 1201 DQDPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1232
 Db 1224 DQDPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1255
 RESULT 12
 ID ADB67621 standard; protein; 1255 AA.
 AC ADB67621;
 XX
 DT 04-DEC-2003 (first entry)
 XX
 DE Human epidermal growth factor receptor 2 protein.
 KW cytostatic; human epidermal growth factor receptor-3; HER-3; heregulin;
 KM HER2; tyrosine kinase activity; cancer; receptor.
 XX
 OS Homo sapiens.
 XX
 PN W02003011897-A1.
 XX
 PD 13-FEB-2003.
 XX
 PF 29-JUL-2002; 2002WO-US023963.
 XX
 PR 27-JUL-2001; 2001US-0308341P.
 XX
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Singer E, Landgraf R, Slamon DJ, Eisenberg D;
 XX
 DR WPI; 2003-300482/29.
 DR N-PSDB; ADB67620.
 XX
 PT Novel human epidermal growth factor receptor 3 variant as agonist or
 PT antagonist of HER3 receptor, for diagnosis/treatment of cells or
 PT pathological conditions associated with aberrant expression of heregulin
 PT or HER3.
 XX
 PS Disclosure; Page 81-82; 137pp; English.
 XX
 CC The invention relates to a non-naturally occurring human epidermal growth
 CC factor receptor (HER)-3 variant polypeptide comprising amino acids 19-329
 CC or 20-329 of the 1342 amino acid HER3 polypeptide (ADB67617) or a
 CC sequence which differs from native HER3 polypeptide and having amino acid
 CC substitutions at residues E43, N44, K51, E64, V66 and V110 of S1, is new.
 CC The variant HER-3 specifically binds to the heregulin polypeptide
 CC (ADB67619), exhibits an impaired ability to interact with HER2
 CC polypeptide (ADB67621), or has an ability to inhibit the interaction
 CC between wild-type HER3 and heregulin. The polypeptide is useful for
 CC identifying a compound which specifically binds to heregulin binding
 CC domain in a HER3 variant polypeptide. The method further involves
 CC determining whether the test compound inhibits or enhances the heregulin
 CC induced tyrosine kinase activity associated with a HER3 polypeptide. The
 CC polypeptide is also useful for determining whether a test compound
 CC modulates the interaction between a heregulin polypeptide, and the
 CC variant HER-3 polypeptide. The HER-3 polypeptide is also useful for

CC inhibiting the interaction between a heregulin polypeptide and HER3
 CC polypeptide, e.g. for treating cancer. The polypeptide is also useful for
 CC stimulating or activating HER3 receptor. This sequence represents the
 CC wild type human HER-2 polypeptide.
 XX
 SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 7; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QVCTGTDMLKRLPASETHLDMRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 60
 Db 24 QVCTGTDMLKRLPASETHLDMRLHLYQGCVVQGNLELTYLPTNASLSFLQDIQEVQY 83
 QY 61 VLIAHNVQVQLRLRIVRGTQLFEDNYALAVLDNGDPLNNTPTVTGASPGGLRELQLR 120
 Db 84 VLIAHNVQVQLRLRIVRGTQLFEDNYALAVLDNGDPLNNTPTVTGASPGGLRELQLR 143
 QY 121 SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDNRSRACHPCSPMKGSR 180
 Db 144 SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDNRSRACHPCSPMKGSR 203
 QY 181 CWGESSEDCQSLTRTVACGACARCKGPLPTDCCHQCAGCTGPKHSDCLACLHFNHSGI 240
 Db 204 CWGESSEDCQSLTRTVACGACARCKGPLPTDCCHQCAGCTGPKHSDCLACLHFNHSGI 263
 QY 241 CELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPHMQEVT 300
 Db 264 CELHCPALVYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPHMQEVT 323
 QY 301 AEDGTORCEKCKPCARVCVGLGMEHLREVRVTSANIOEFAGCKKIFGSLAFLPESFDG 360
 Db 324 AEDGTORCEKCKPCARVCVGLGMEHLREVRVTSANIOEFAGCKKIFGSLAFLPESFDG 383
 QY 361 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 420
 Db 384 DPASNTAPLQPEQLQVFETLEETGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 443
 QY 421 TLQGLGISWLGLRLSRLSGSLALIHNNTHLCFVHTVPMDQLFRNPQHALLHTANRPEDE 480
 Db 444 TLQGLGISWLGLRLSRLSGSLALIHNNTHLCFVHTVPMDQLFRNPQHALLHTANRPEDE 503
 QY 481 CVGEGGLACHQLCARGHCWGPPTQCVCNCSQFIRGQECVEECRVLQGLPREYVNAHCLPC 540
 Db 504 CVGEGGLACHQLCARGHCWGPPTQCVCNCSQFIRGQECVEECRVLQGLPREYVNAHCLPC 563
 QY 541 HPECQPNQSGVTCFGEADQCVACAHYKDPFPCVARCPGSKPDLSTYMPIWKFPDEGAC 600
 Db 564 HPECQPNQSGVTCFGEADQCVACAHYKDPFPCVARCPGSKPDLSTYMPIWKFPDEGAC 623
 QY 601 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLGVFGILIKRROOKIR 660
 Db 624 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVLGVFGILIKRROOKIR 683
 QY 661 KYTMRLLQETELVEPLTPSGAMPNOAOMRILKETELRKVKVLSGAGFVYKGIWIPDG 720
 Db 684 KYTMRLLQETELVEPLTPSGAMPNOAOMRILKETELRKVKVLSGAGFVYKGIWIPDG 743
 QY 721 ENVKIPVAIKVIRENTSPKANKEILDEAYMAGVGSPPYVSRLLGICLTSTVQLVTQLMPY 780
 Db 744 ENVKIPVAIKVIRENTSPKANKEILDEAYMAGVGSPPYVSRLLGICLTSTVQLVTQLMPY 803
 QY 781 GCLLDHVRENRGLSGQDILLNWCMIQAKGMSYLEDLVLRHDLAARNLVKSPNHVKITD 840
 Db 804 GCLLDHVRENRGLSGQDILLNWCMIQAKGMSYLEDLVLRHDLAARNLVKSPNHVKITD 863
 QY 841 FGLARLLDIDETEHADGKGKVPKKNWALSILRRRTTHOSDVMWSYGVTVWELMTFGAKPY 900
 Db 864 FGLARLLDIDETEHADGKGKVPKKNWALSILRRRTTHOSDVMWSYGVTVWELMTFGAKPY 923
 QY 901 DGIAPAREIPDLLEKGERLPPQPTCTIDVTVMVWKCMIDSECRPRFRELVSFSEMRADP 960

Db 924 DGIPAREIPDLLEKGERLPQPPICTIDVYMIWVKWMDSECRPRPRELVSEFSRMDP 983
Qy 961 QRFVVIQNEEDLGPASPLDSTFVRSLEDDMDGLVDAEYLVPOQGFPCPDAPGAGGV 1020
Db 984 QRFVVIQNEEDLGPASPLDSTFVRSLEDDMDGLVDAEYLVPOQGFPCPDAPGAGGV 1043
Qy 1021 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEAGSDVFDGLGMAAKGLQSLPT 1080
Db 1044 HHRHRSSTRSGGDLTLGLEPSEEEAPRSPAPSEAGSDVFDGLGMAAKGLQSLPT 1103
Qy 1081 HDSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1140
Db 1104 HDSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNOPDVRPQPPSPREGPLPAARPA 1163
Qy 1141 GATLEBAKTLSPCKNGVXKDVAFGAVENPEVLTPOGGAAPQPHPPAFSAFONLYY 1200
Db 1164 GATLEBAKTLSPCKNGVXKDVAFGAVENPEVLTPOGGAAPQPHPPAFSAFONLYY 1223
Qy 1201 DQDPPERGAPPSTFKTPTAENPEYLGLDVVP 1232
Db 1224 DQDPPERGAPPSTFKTPTAENPEYLGLDVVP 1255

RESULT 13

ADH13187
ID ADH13187 standard; protein; 1255 AA.
XX
AC ADH13187;
XX
DT 11-MAR-2004 (first entry)
XX
DE Human malignant neoplasia-related protein SeqID36.
XX
KW malignant neoplasia; cytostatic; breast cancer; ovarian cancer;
KW gastric cancer; colon cancer; esophageal cancer; mesenchymal cancer;
KW bladder cancer; non-small cell lung cancer; human.
XX
OS Homo sapiens.
XX
PN EP1365034-A2.
XX
PD 26-NOV-2003.
XX
PF 09-MAY-2003; 2003EP-00010447.
XX
PR 21-MAY-2002; 2002EP-00010291.
PR 13-FEB-2003; 2003EP-00003112.
XX
PA (PARB) BAYER AG.
XX
PI Wirtz R, Munnes M, Kallabis H;
XX
WPI; 2004-073279/08.
DR N-PSDB; ADH13161.
XX
PT Predicting, diagnosing or prognosing malignant neoplasia by detecting at
PT least two markers, where the markers are genes from one or more
PT chromosomal regions altered in malignant neoplasia.
XX
PS Claim 12; SEQ ID NO 36; 267pp; English.

XX
CC This invention relates to a novel method for the prediction, diagnosis,
CC or prognosis of malignant neoplasia by the detection of at least two
CC markers. The invention may also be useful for the development of
CC cytostatic compounds through the regulation of the expression of a gene
CC or activity of a protein associated with malignant neoplasia. The method
CC is useful for prediction, diagnosis or prognosis of malignant neoplasia
CC such as breast cancer, ovarian cancer, gastric cancer, colon cancer,
CC esophageal cancer, mesenchymal cancer, bladder cancer or non-small cell
CC lung cancer. The polynucleotides and polypeptides defined in the
CC specification, antisense polynucleotides targeting the polynucleotides,
CC antibodies targeting either one of the polynucleotides or polypeptides,
CC and compounds identified by the screening methods are useful for

CC preventing or treating malignant neoplasia. The disease treated is
CC preferably breast cancer. The present sequence is that of a human
CC malignant neoplasia-related protein which may be used in the method of
CC the invention.
XX
SQ Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 8; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 QVCTGTDMLKRLPASPETHDMLRLHYQGCQVQGNLELTLYLPTNWSLSFLQDIQEVQY 60
Db 24 QVCTGTDMLKRLPASPETHDMLRLHYQGCQVQGNLELTLYLPTNWSLSFLQDIQEVQY 83
Qy 61 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGPLNNTTPTVTGASPGGLRELQIR 120
Db 84 VLIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGPLNNTTPTVTGASPGGLRELQIR 143
Qy 121 SLTEILKGGVLIQRPOLCYQDTILWKDI FHKNNQALTLIDTNRSRACHPCSPMCKGSR 180
Db 144 SLTEILKGGVLIQRPOLCYQDTILWKDI FHKNNQALTLIDTNRSRACHPCSPMCKGSR 203
Qy 181 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCCHQCAAGCTGPKHSDCLACLHFNHSGI 263
Qy 241 CELHCPALVTNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLCVPLHNOEVT 300
Db 264 CELHCPALVTNTDTFESMPNPEGRYTFGASCVTACPNYLSLTDVGSCTLCVPLHNOEVT 323
Qy 301 AEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSANIQEPAGCKKITFGSLAFLPESPDG 360
Db 324 AEDGTORCEKSKPCARVCYGLGMEHLREVRAVTSANIQEPAGCKKITFGSLAFLPESPDG 383
Qy 361 DPASNTAPLOPEQLQVFETLEEITGYLYISAWPDSLPLSVFQNLQVIRGRILHNGAYSL 420
Db 384 DPASNTAPLOPEQLQVFETLEEITGYLYISAWPDSLPLSVFQNLQVIRGRILHNGAYSL 443
Qy 421 TLQGLGISWLGRLSRLRELGSGLALIHNNTHLCFVHTVPWDQLFRPHQALLHTANRPEDE 480
Db 444 TLQGLGISWLGRLSRLRELGSGLALIHNNTHLCFVHTVPWDQLFRPHQALLHTANRPEDE 503
Qy 481 CVGEGLACHOLCARGHCHGPGTQCVCNSQFLRGQECVBECKVLQGLPREYNARHCLPC 540
Db 504 CVGEGLACHOLCARGHCHGPGTQCVCNSQFLRGQECVBECKVLQGLPREYNARHCLPC 563
Qy 541 HPECQPNQSVTCFQPEADQCACAHYKDPFPCVARCPSGVKPDLSYMPIWKFPEEGAC 600
Db 564 HPECQPNQSVTCFQPEADQCACAHYKDPFPCVARCPSGVKPDLSYMPIWKFPEEGAC 623
Qy 601 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVVLGVFGILIKRQOKIR 660
Db 624 QPCPINCTHSCVDLDDKGPAPORASPLTSIVSAVVGILLVVVLGVFGILIKRQOKIR 683
Qy 661 KYTMRLLQETELVEPLTPSGAMPNQAMRILKETELARKVKVLGSGAGFTVYKGIWIPDG 720
Db 684 KYTMRLLQETELVEPLTPSGAMPNQAMRILKETELARKVKVLGSGAGFTVYKGIWIPDG 743
Qy 721 ENVKIPVAIKVRENTSPKANKEIIDEAYVWAGVSPVSRLLGICLTSTVOLVTQLMPY 780
Db 744 ENVKIPVAIKVRENTSPKANKEIIDEAYVWAGVSPVSRLLGICLTSTVOLVTQLMPY 803
Qy 781 GCLLDHVRNCRGLSGDILLANCMQIAKMSVLEDDVRLVHRDLAARNVLKSPNHVKITD 840
Db 804 GCLLDHVRNCRGLSGDILLANCMQIAKMSVLEDDVRLVHRDLAARNVLKSPNHVKITD 863
Qy 841 FGLARLLDIDETEHADGGKVPKIKWMALESILRRFTHQSDVWSYGVTVWELMTGAKFY 900
Db 864 FGLARLLDIDETEHADGGKVPKIKWMALESILRRFTHQSDVWSYGVTVWELMTGAKFY 923
Qy 901 DGIPAREIPDLLEKGERLPQPPICTIDVYMIWVKWMDSECRPRPRELVSEFSRMDP 960

Db 924 DGIPARIPDLLEKGERLPQPPICITIDVYIMVCKMIDSECRPRPRELVSEFSRWARDP 983
 Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCCPDPAAGGMV 1020
 Db 984 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCCPDPAAGGMV 1043
 Qy 1021 HHRHSSTRSGGGDLTLGLEPSEEEAPRSPPLAPSEGAGSDVDFDGLGMAAGLQSLPT 1080
 Db 1044 HHRHSSTRSGGGDLTLGLEPSEEEAPRSPPLAPSEGAGSDVDFDGLGMAAGLQSLPT 1103
 Qy 1081 HDSPLOQYSEDPTVPLPSETDGVVPLTCSPPQBEYVNDVDRPQPPSPREGPLPAARPA 1140
 Db 1104 HDSPLOQYSEDPTVPLPSETDGVVPLTCSPPQBEYVNDVDRPQPPSPREGPLPAARPA 1163
 Qy 1141 GATLERAKTILSPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLYYW 1200
 Db 1164 GATLERAKTILSPGKNGVVKDVFAPFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFDNLYYW 1223
 Qy 1201 QDPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1232
 Db 1224 QDPPERGAPPSTFKGTPTAENPEYLGLDVVPV 1255

RESULT 14
 ADM72831
 ID ADM72831 standard; protein; 1255 AA.
 XX AC ADM72831;
 XX DT 03-JUN-2004 (first entry)
 XX DE Human Her2/Neu protein SEQ ID NO:90.
 XX KW epitope; epitope cluster; virucide; cytostatic; vaccine; viral infection;
 XX KW cancer; tumour; human; Her2-Neu.
 XX OS Homo sapiens.
 XX PN W02004022709-A2.
 XX PD 18-MAR-2004.
 XX PF 05-SEP-2003; 2003WO-US027706.
 XX PR 06-SEP-2002; 2002US-0409123P.
 XX PA (MANN-) MANNKIND CORP.
 XX PI Simard J/L, Diamond DC, Liu L, Liu Z;
 XX DR WPI; 2004-315564/29.
 XX DR N-PSDB; ADM72832.
 XX PT New polypeptides and encoding nucleic acids that are useful epitopes of
 PT target-associated antigens, useful for diagnosing and/or treating viral
 PT infections, cancers and tumors.
 XX PS Disclosure; SEQ ID NO 90; 357pp; English.
 XX CC The present invention describes a polypeptide (I) comprising a component
 CC selected from: (a) a polypeptide epitope having any of the 503 fully
 CC defined sequences of 8-33 amino acids (SEQ ID NO:108-610); (b) an epitope
 CC cluster comprising the polypeptide of (a); (c) a polypeptide having
 CC substantial similarity to (a) or (b); (d) a polypeptide having functional
 CC similarity to any of (a)-(c); or (e) a nucleic acid encoding the
 CC polypeptide of (a)-(c). (I) has virucide and cytostatic activities, and
 CC can be used in vaccines. The methods and compositions of the present
 CC invention are useful for the diagnosis and/or treatment of viral
 CC infections, cancers and tumors. The present sequence is used in the
 CC exemplification of the present invention.
 XX SQ Sequence 1255 AA;

Query Match 100.0%; Score 6694; DB 8; Length 1255;
 Best Local Similarity 100.0%; Pred. No. 0;
 Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QVCTGTDMLRLPASBETHLDMLRHLYQGCQVQGNLELTYLPTNLSLFLQDIQEVQGY 60
 Db 24 QVCTGTDMLRLPASBETHLDMLRHLYQGCQVQGNLELTYLPTNLSLFLQDIQEVQGY 83
 Qy 61 VLTAHQVQVPLQRLRIVRGTOLFDNYALAVLDNGDPLANNTPVTGASPGGLRELQLR 120
 Db 84 VLTAHQVQVPLQRLRIVRGTOLFDNYALAVLDNGDPLANNTPVTGASPGGLRELQLR 143
 Qy 121 SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDNRSRACHPCSPMCKGSR 180
 Db 144 SLTEILKGGVLIQRNPQLCYQDTILWKDIFHKNNQLALTLIDNRSRACHPCSPMCKGSR 203
 Qy 181 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 240
 Db 204 CWGESSEDCQSLTRTVCAAGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLHFNHSGI 263
 Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPHNOEVT 300
 Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCVTACPYNYLSTDVGSCTLVCPHNOEVT 323
 Qy 301 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIOBFAGCKKIFGSLAFLPSFDG 360
 Db 324 AEDGTQRCCKSKPCARVCYGLGMEHLREVRVTSANIOBFAGCKKIFGSLAFLPSFDG 383
 Qy 361 DPASNTAPLOPEQLQVFETLEITGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 420
 Db 384 DPASNTAPLOPEQLQVFETLEITGYLYISAWPDSLPLDSVFQNLQVIRGRILHNGAYSL 443
 Qy 421 TLQGLGISMGLSRSLRELGLALIHNNTHLCFVHTVPMWDLFRNPHQALLHTANPEDE 480
 Db 444 TLQGLGISMGLSRSLRELGLALIHNNTHLCFVHTVPMWDLFRNPHQALLHTANPEDE 503
 Qy 481 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFARGQECVEECRVLQGLPREYVNAHCLPC 540
 Db 504 CVGEGLAHQLCARGHCWGPPTQCVCNCSQFARGQECVEECRVLQGLPREYVNAHCLPC 563
 Qy 541 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVACPSGVKPDLSYMPYIWKFPDEGAC 600
 Db 564 HPECQPNQSVTCFGEADQCVACAHYKDPFPFCVACPSGVKPDLSYMPYIWKFPDEGAC 623
 Qy 601 QPCPINCTHSCVDLDDKGCPEAQRASPLTSISAVVGIILVVLGVVFGILLIKRQOKIR 660
 Db 624 QPCPINCTHSCVDLDDKGCPEAQRASPLTSISAVVGIILVVLGVVFGILLIKRQOKIR 683
 Qy 661 KYTMRELLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVGLGSAFGTVYKGIWIPDG 720
 Db 684 KYTMRELLQETELVEPLTPSGAMPNQAQMRILKETELRKVKVGLGSAFGTVYKGIWIPDG 743
 Qy 721 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGSPPYVSRLGICLTSTVQLVQLMPY 780
 Db 744 ENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVGSPPYVSRLGICLTSTVQLVQLMPY 803
 Qy 781 GCLLDHVNRNGLSGSODLLNMCQIAKGMYSYLEDVRLVHRDLAARNVLKSPNHVKITD 840
 Db 804 GCLLDHVNRNGLSGSODLLNMCQIAKGMYSYLEDVRLVHRDLAARNVLKSPNHVKITD 863
 Qy 841 FGLARLLDDIETEHADGGKVPKWMALRESILRRRTHQSDVMSYGVTVWELMTFGAKPY 900
 Db 864 FGLARLLDDIETEHADGGKVPKWMALRESILRRRTHQSDVMSYGVTVWELMTFGAKPY 923
 Qy 901 DGIPAREIPDLLEKGERLPQPPICITIDVYIMVCKMIDSECRPRPRELVSEFSRWARDP 960
 Db 924 DGIPAREIPDLLEKGERLPQPPICITIDVYIMVCKMIDSECRPRPRELVSEFSRWARDP 983
 Qy 961 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCCPDPAAGGMV 1020
 Db 984 QRFVVIQNEIDLGPASPLDSTFYRSLLEDDDDMDGLVDAAEYLVPOQGFCCPDPAAGGMV 1043
 Qy 1021 HHRHSSTRSGGGDLTLGLEPSEEEAPRSPPLAPSEGAGSDVDFDGLGMAAGLQSLPT 1080

Db 1044 HHRHRSSTRSGGDLTLGLEPSEEAAPSLAPSEAGSDVDFDGLGMAAKGLQSLPT 1103
Qy 1081 HDPSPLQRYSEDTPLPSETDGYVAPLTCSPQPEYVNPDPVRPQPPSPREGPLPAARPA 1140
Db 1104 HDPSPLQRYSEDTPLPSETDGYVAPLTCSPQPEYVNPDPVRPQPPSPREGPLPAARPA 1163
Qy 1141 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFNLYYW 1200
Db 1164 GATLERAKTLPSPKNGVVDVFAFGGAVENPEYLTPOGGAAPQHPHPPAFSPAFNLYYW 1223
Qy 1201 DQPPPERGAPPSTFKGTPTAENPEYLGIDVPV 1232
Db 1224 DQPPPERGAPPSTFKGTPTAENPEYLGIDVPV 1255

RESULT 15
ADO20009 standard; protein; 1255 AA.
AC ADO20009;
XX
DT 12-AUG-2004 (first entry).
XX
DE Human PRO polypeptide #460.
XX
KW Human; PRO; immune related disorder; systemic lupus erythematosus;
KW rheumatoid arthritis; osteoarthritis; juvenile chronic arthritis;
KW systemic sclerosis; Sjogren's syndrome; vasculitis; sarcoidosis;
KW autoimmune haemolytic anaemia; autoimmune thrombocytopenia; thyroiditis;
KW diabetes mellitus; renal disease; demyelinating disease;
KW central nervous system; peripheral nervous system;
KW demyelinating polyneuropathy; Guillain-Barre syndrome;
KW chronic inflammatory demyelinating polyneuropathy.
XX
OS Homo sapiens.
XX
PN WO2004043361-A2.
XX
PD 27-MAY-2004.
XX
PF 06-NOV-2003; 2003WO-US035268.
XX
PR 08-NOV-2002; 2002US-0425235P.
XX
PA (GETH) GENENTECH INC.
XX
PI Fong S, Dennis K, Clark H, Chiu H, Schoenfeld J, Williams PM;
PI Wood WI, Wu TD;
XX
DR WPI; 2004-420067/39.
DR N-PSDB; ADO20008.
XX
PT Novel PRO polypeptide e.g., PRO69614, PRO71106, or PRO86388 useful for
PT treating an immune related disorder such as systemic lupus erythematosus,
PT rheumatoid arthritis, osteoarthritis, juvenile chronic arthritis or
PT spondyloarthritis.
XX
PS Claim 7; SEQ ID NO 920; 1731pp; English.
XX
CC The invention relates to human PRO polypeptides and the polynucleotides
CC encoding them. The polypeptides and polynucleotides are useful for
CC treating and diagnosing immune related disorders in mammals. The immune
CC related disorders include systemic lupus erythematosus, rheumatoid
CC arthritis, osteoarthritis, juvenile chronic arthritis, systemic
CC sclerosis, Sjogren's syndrome, vasculitis, sarcoidosis, autoimmune
CC haemolytic anaemia, autoimmune thrombocytopenia, thyroiditis, diabetes
CC mellitus, immune-mediated renal disease, demyelinating diseases of the
CC central or peripheral nervous system, demyelinating polyneuropathy,
CC Guillain-Barre syndrome and chronic inflammatory demyelinating
CC invention. This sequence represents a human PRO polypeptide of the

SQ Sequence 1255 AA;
Query Match 100.0%; Score 6694; DB 8; Length 1255;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1232; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Qy 1 QVCTGDMKRLPASPETHLDMRLHYGGCVVQGNLELTYLPTNASTLFLQDIQEVQY 60
Db 24 QVCTGDMKRLPASPETHLDMRLHYGGCVVQGNLELTYLPTNASTLFLQDIQEVQY 83
Qy 61 VLIAHNVQVPLQRLRIVRGTLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 120
Db 84 VLIAHNVQVPLQRLRIVRGTLFEDNYALAVLDNGDPLNNTTPTVTGASPGGLRELQLR 143
Qy 121 SLTEILKGGVLIQRNPQLCYQDTILWKDI FHNQALATLIDTNRSRACHPCSPMKGSR 180
Db 144 SLTEILKGGVLIQRNPQLCYQDTILWKDI FHNQALATLIDTNRSRACHPCSPMKGSR 203
Qy 181 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLFHNSGI 240
Db 204 CWGESSEDCQSLTRTVCAAGGCARCKGPLPTDCHEQCAAGCTGPKHSDCLACLFHNSGI 263
Qy 241 CELHCPALVTYNTDTFESMPNPEGRYTFGASCTVACPNYLSLTDVGSCTLVCPLNQEV 300
Db 264 CELHCPALVTYNTDTFESMPNPEGRYTFGASCTVACPNYLSLTDVGSCTLVCPLNQEV 323
Qy 301 AEDGTQCEKSKPCARVCYGLGMEHLREVRVTSANIOEPAGCKKIFGSLAFLPESFDG 360
Db 324 AEDGTQCEKSKPCARVCYGLGMEHLREVRVTSANIOEPAGCKKIFGSLAFLPESFDG 383
Qy 361 DPASNTAPLOEQLOVFTLEITGYLYISAWPDSLPDLSVFQNLQVIRGLHNGAYSL 420
Db 384 DPASNTAPLOEQLOVFTLEITGYLYISAWPDSLPDLSVFQNLQVIRGLHNGAYSL 443
Qy 421 TLQGLGISWLGRLSRLRELSGLALHNNTHLCFVHTVPWDQLFRPHQALLHTANRPDE 480
Db 444 TLQGLGISWLGRLSRLRELSGLALHNNTHLCFVHTVPWDQLFRPHQALLHTANRPDE 503
Qy 481 CVGEGLAGHOLCARGHCWPGTQCVCNGSQFLRGQECVEECKVLQGLPREYVNAHCLPC 540
Db 504 CVGEGLAGHOLCARGHCWPGTQCVCNGSQFLRGQECVEECKVLQGLPREYVNAHCLPC 563
Qy 541 HPCEQPQNGSVTCFGEADQCACAHYKDPFCVACRCPGSKVPKPLDSYMP1WKFPDEGAC 600
Db 564 HPCEQPQNGSVTCFGEADQCACAHYKDPFCVACRCPGSKVPKPLDSYMP1WKFPDEGAC 623
Qy 601 QPCPNCTHSCVDLDDKGCAPAEQASPLTISVAVVGLLVVVLGVVFGILIKRQOKIR 660
Db 624 QPCPNCTHSCVDLDDKGCAPAEQASPLTISVAVVGLLVVVLGVVFGILIKRQOKIR 683
Qy 661 KYTMRLLQETELVRPLTPSGAMPNQAOMRILKETELRKVKVLGSGAFGVVKGWIPDG 720
Db 684 KYTMRLLQETELVRPLTPSGAMPNQAOMRILKETELRKVKVLGSGAFGVVKGWIPDG 743
Qy 721 ENVKIPVAIKVIRENTSPKANKEIIDEAYVMAVGSPYVSRLLGICLTSTVOLVTQLMPY 780
Db 744 ENVKIPVAIKVIRENTSPKANKEIIDEAYVMAVGSPYVSRLLGICLTSTVOLVTQLMPY 803
Qy 781 GCLLDHVRNREGRGLSQDILLNWCMIKAGMSVLEVDVRLVHRLDAAARNVLKSPNVKIID 840
Db 804 GCLLDHVRNREGRGLSQDILLNWCMIKAGMSVLEVDVRLVHRLDAAARNVLKSPNVKIID 863
Qy 841 FGLARLLDIDETEHADGGKVP1KWMALFESILRRRFTHQSDVMSYGVTVWELMTFGAKPY 900
Db 864 FGLARLLDIDETEHADGGKVP1KWMALFESILRRRFTHQSDVMSYGVTVWELMTFGAKPY 923
Qy 901 DGPAREIPDLLEKGRRLPQPPICITIDVYIMVVKMWIDSECRPPRELVSFESRWARDP 960
Db 924 DGPAREIPDLLEKGRRLPQPPICITIDVYIMVVKMWIDSECRPPRELVSFESRWARDP 983
Qy 961 ORFWIQLNEDIGASPILDSTFVRSILLEDDMDGLVDABEYLVPOQGFCCPDPAAGGVMV 1020
Db 984 QRFVVIQNEDLGASPILDSTFVRSILLEDDMDGLVDABEYLVPOQGFCCPDPAAGGVMV 1043

Qy	1021	HHRRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEGAGSDVFDGDLGMGAAGLQSLPT	1080
Db	1044	HHRRSSSTRSGGDLTLGLEPSEEEAPRSLAPSEGAGSDVFDGDLGMGAAGLQSLPT	1103
Qy	1081	HDPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA	1140
Db	1104	HDPSPLQRYSEDPVPLPSETDGYVAPLTCSPQPEYVNPQDVRPQPPSPREGPLPAARPA	1163
Qy	1141	GATLERAKTILSPGKNGVVKDVFAGGAVENPEYLTPOGGAPOPHPPPAESPAFDNLYYW	1200
Db	1164	GATLERAKTILSPGKNGVVKDVFAGGAVENPEYLTPOGGAPOPHPPPAESPAFDNLYYW	1223
Qy	1201	DQPPPERGAPPSTFKGTPTAENPEYLGLDVPV	1232
Db	1224	DQPPPERGAPPSTFKGTPTAENPEYLGLDVPV	1255

Search completed: January 25, 2005, 21:23:17
Job time : 140.275 secs

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OM protein - protein search, using sw model

Run on: January 25, 2005, 21:16:15 ; Search time 36.8376 Seconds
(without alignments)
3277.960 Million cell updates/sec

Title: US-09-806-703A-4
Perfect score: 6812
Sequence: 1 MELAALCRWGLLALLPPGA.....TFKGTPTAENPEYLGLDVVP 1255

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues
Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:.*
1: Pirl1.*
2: Pirl2.*
3: Pirl3.*
4: Pirl4.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	6806	99.9	1255	1 T24571	protein-tyrosine k
2	5988	87.9	1260	1 T24571	protein-tyrosine k
3	5984.5	87.9	1254	1 T48161	p-185 precursor -
4	3168	46.5	1210	1 GQHUE	epidermal growth f
5	3144	46.2	1210	2 A53183	epidermal growth f
6	3123.5	45.9	1223	1 TVCHLV	epidermal growth f
7	3003.5	44.1	1308	2 A47253	epidermal growth f
8	2701	39.7	1166	1 S06142	protein-tyrosine k
9	2431.5	35.7	1342	2 A36223	kinase-related tra
10	2346.5	34.4	1339	2 JC4387	epidermal growth f
11	1766.5	25.9	698	1 TVFVUH	protein-tyrosine k
12	1703	25.0	604	1 TVFVUH	protein-tyrosine k
13	1652.5	24.3	1330	1 GQFEE	epidermal growth f
14	1647	24.2	544	2 S35745	protein-tyrosine k
15	1640	24.1	545	2 S00727	kinase-related tra
16	1623	23.8	540	2 B44776	protein-tyrosine k
17	1621	23.8	540	1 TVFVFB	protein-tyrosine k
18	1536	22.5	644	2 A36325	epidermal growth f
19	1302	19.1	1323	2 E88257	protein let-23 [im
20	1302	19.1	1374	2 S70712	protein-tyrosine k
21	1214	17.8	1369	2 S70713	protein-tyrosine k
22	1177	17.3	1717	1 A45558	epidermal growth f
23	1155	17.0	527	2 A42032	epidermal growth f
24	997.5	14.6	843	2 A37131	epidermal growth f
25	806.5	11.8	346	2 S13807	protein-tyrosine k
26	754.5	11.1	311	2 S13808	protein-tyrosine k
27	735	10.8	1363	2 T43220	insulin-like growt
28	718	10.5	1382	1 INHUR	insulin receptor p
29	711	10.4	1383	2 A36080	insulin receptor p

ALIGNMENTS

RESULT 1

A24571

protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human
N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming protein erb
C;Species: Homo sapiens (man)
C;Date: 25-Oct-1987 #sequence revision 06-Dec-1996 #text change 09-Jul-2004
C;Accession: A24571; A25491; A44188; B44188; I59509; I57622
R;Yamamoto, T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Saito, T.;
Nature 319, 230-234, 1986
A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epidermal growth
A;Reference number: A24571; MUID:86118663; PMID:3003577
A;Accession: A24571
A;Molecule type: mRNA
A;Residues: 1-1255 <YAM>
A;Cross-references: UNIPROT:P04626; GB:X03363; NID:g31197; PIDN:CAA27060.1; PID:g31198
R;Semba, K.; Kamata, N.; Toyoshima, K.; Yamamoto, T.
Proc. Natl. Acad. Sci. U.S.A. 82, 6497-6501, 1985
A;Title: A v-erbB-related protooncogene, c-erbB-2, is distinct from the c-erbB-1/epider
A;Reference number: A25491; MUID:86016729; PMID:2995967
A;Accession: A25491
A;Molecule type: DNA
A;Residues: 737-1031 <SEM>
A;Cross-references: GB:M11767; NID:g182163; PIDN:AAA35808.1; PID:g553282
R;Cousens, L.; Yang-Feng, T.L.; Liao, Y.C.; Chen, E.; Gray, A.; McGrath, J.; Seeburg,
Science 230, 1132-1139, 1985
A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor shares chromo
A;Reference number: A44188; MUID:86070181; PMID:2999974
A;Accession: A44188
A;Molecule type: DNA
A;Residues: 740-910 <COU1>
A;Cross-references: GB:M12036; NID:g183988; PIDN:AAA35978.1; PID:g183989
A;Accession: B44188
A;Molecule type: mRNA
A;Residues: 1-517; 'RALL', 522, 'S', 524-654, 'V', 656-1169, 'A', 1171-1255 <COU2>
A;Cross-references: GB:M11730; NID:g183986
R;King, C.R.; Kraus, M.H.; Aaronson, S.A.
Science 229, 974-976, 1985
A;Title: Amplification of a novel v-erbB-related gene in a human mammary carcinoma.
A;Reference number: I59509; MUID:85272597; PMID:2992089
A;Accession: I59509
A;Status: translated from GB/EMBL/DBJ
A;Molecule type: DNA
A;Residues: 832-909 <REX>
A;Cross-references: GB:L29395; NID:g459807; PIDN:AAA35809.1; PID:g459808
R;Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, D.
Mol. Cell. Biol. 7, 2597-2601, 1987
A;Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for transcriptiona
A;Reference number: I57622; MUID:87286898; PMID:3039351
A;Accession: I57622
A;Status: translated from GB/EMBL/DBJ
A;Molecule type: DNA
A;Residues: 1-191 <TAL>

insulin receptor p
insulin-like growt
insulin receptor-r
protein-tyrosine k
insulin receptor-r
insulin-like growt
insulin-like growt
insulin receptor -
insulin receptor -
insulin receptor -
protein-tyrosine k
protein-tyrosine k
protein-tyrosine k
protein-tyrosine k
protein-tyrosine k

A;Cross-references: GB:M16792; NID:g183983; PIDN:AAA58637.1; PID:g553332
C;Comment: Amplification and overexpression of this erbB-related gene occurs in about 30
C;Genetics:
A;Gene: GDB:ERBB2; NGL; NEU; HER-2
A;Cross-references: GDB:120613; OMIM:164870
A;Map position: 17q21.1-17q21.1
A;Introns: 25/1; 75/3; 147/1; 883/3
A;Note: the list of introns is incomplete
C;Function:
A;Description: catalyzes the phosphorylation of a peptidyl tyrosine residue by ATP
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho
inase
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-1255/Product: protein-tyrosine kinase erbB2 #status predicted <MAT>
F;22-633/Domain: extracellular #status predicted <EXT>
F;70-304/Domain: EGF receptor extracellular domain repeat <BE1>
F;395-605/Domain: EGF receptor extracellular domain repeat <EE2>
F;654-675/Domain: transmembrane #status predicted <TM>
F;676-1255/Domain: intracellular #status predicted <INT>
F;718-983/Domain: protein kinase homology <KIN>
F;726-734/Region: protein kinase ATP-binding motif
F;68,124,187,259,530,571,629/Binding site: carboxydrate (Asn) (covalent) #status predicted
F;686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;753/Active site: Lys #status predicted
F;1139,1221,1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation)

Query Match 99.9%; Score 6806; DB 1; Length 1255;
Best Local Similarity 99.8%; Pred. No. 1.4e-275;
Matches 1253; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

QY 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLRLPASPTHLDMLRLHYQGQVQGNL 60
DB 1 MELAALCRWGLLLALLPPGAASQVCTGTDMLRLPASPTHLDMLRLHYQGQVQGNL 60

QY 61 ELTYLPNLSFLQDIQEQGYVLIHAHQVQVPLQRLIRVGTQLFEDNYALAVLDNG 120
DB 61 ELTYLPNLSFLQDIQEQGYVLIHAHQVQVPLQRLIRVGTQLFEDNYALAVLDNG 120

QY 121 DPLNNTTPVVGASPGGLRELQLRLSLTEILKGGVLIQBNPOLCYQDTILWKDIFHKNNOLA 180
DB 121 DPLNNTTPVVGASPGGLRELQLRLSLTEILKGGVLIQBNPOLCYQDTILWKDIFHKNNOLA 180

QY 181 LTLDITNRSRACHPCSPMKSGSCWGSSEDCOSLRTVTCAGCARCKGPLPDCCHEQC 240
DB 181 LTLDITNRSRACHPCSPMKSGSCWGSSEDCOSLRTVTCAGCARCKGPLPDCCHEQC 240

QY 241 AAGCTGPKHSDCLACHFNHSGICELHCPALVTYNTDTFESMPNPEGRVYTFGASCVTACP 300
DB 241 AAGCTGPKHSDCLACHFNHSGICELHCPALVTYNTDTFESMPNPEGRVYTFGASCVTACP 300

QY 301 YNYLSTDVGSLVCPPLHNOEVAEDGTQCEKSKPCARVCYGLGMEHLREVRATVSAN 360
DB 301 YNYLSTDVGSLVCPPLHNOEVAEDGTQCEKSKPCARVCYGLGMEHLREVRATVSAN 360

QY 361 IQEFAGCKIFGSLAFPEFSDGDPASNTAPLOEQLQVETLEETIGYLIISAWPDSLP 420
DB 361 IQEFAGCKIFGSLAFPEFSDGDPASNTAPLOEQLQVETLEETIGYLIISAWPDSLP 420

QY 421 DLSVFQNLQVIRGRILHNGAYSITLQGLGISWGLSLRELGLSLAIHNTLHLCFVHTV 480
DB 421 DLSVFQNLQVIRGRILHNGAYSITLQGLGISWGLSLRELGLSLAIHNTLHLCFVHTV 480

QY 481 PWDLFRNPHQALLHTANRDECEVGEGLACHOLCARGHCWGPGPTQCNCOSFLRGQC 540
DB 481 PWDLFRNPHQALLHTANRDECEVGEGLACHOLCARGHCWGPGPTQCNCOSFLRGQC 540

QY 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADOCVACAHKDPFPCVARC 600
DB 541 VEECRVLQGLPREYVNAHCLPCHPECPQNGSVTCFGEADOCVACAHKDPFPCVARC 600

QY 601 PSGVKPDLSPYIWKFPDEGACPCPCINCTHSCVDLDDKGCAPQASPLTSISAVVG 660

RESULT 2
TVETNU

protein-tyrosine kinase (EC 2.7.1.112) neu precursor - rat

C;Species: Rattus norvegicus (Norway rat)

C;Date: 31-Dec-1988 #sequence_revision 31-Dec-1988 #text_change 09-Jul-2004

C;Accession: A24562; A61204

R;Bargmann, C.I.; Hung, M.C.; Weinberg, R.A.

Nature 319, 226-230, 1986

A;Title: The neu oncogene encodes an epidermal growth factor receptor-related protein.

A;Reference number: A24562; MUID:86118662; PMID:3945311

A;Accession: A24562

A;Molecule type: mRNA

A;Residues: 1-1260 <BAR>

A;Cross-references: UNIPROT:P06494; EMBL:X03362; NID:g56745; PIDN:CAA27059.1; PID:g5674

R;Masui, T.; Mann, A.M.; Macatee, T.L.; Garland, E.M.; Okamura, T.; Smith, R.A.; Cohen,

Carcinogenesis 12, 1975-1978, 1991

A;Title: Direct DNA sequencing of the rat neu oncogene transmembrane domain reveals no

2-thiazolyl]formamide or N-methyl-N-nitrosourea.

A;Reference number: A61204; MUID:92035293; PMID:1682063

A;Accession: A61204

A;Status: preliminary

A;Molecule type: DNA

A;Residues: 637-663, 'V', 665-702 <MAS>

A;Note: authors translated the codon GCA for residue 25 as Val

C;Genetics:

A;Gene: neu

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phosph

F;1-19/Domain: signal sequence #status predicted <SIG>

F;20-1260/Product: protein-tyrosine kinase neu #status predicted <MAT>

F:658-680/Domain: transmembrane #status predicted <TM>
 F:723-988/Domain: protein kinase homology <KIN>
 F:731-739/Region: protein kinase ATP-binding motif
 F:711,191,263,535,576,634/Binding site: carbohydrate (Aen) (covalent) #status predicted
 F:691/Binding site: phosphate (Thr) (covalent) #status predicted
 F:758/Active site: Lys #status predicted
 F:882,1227,1253/Binding site: phosphate (Tyr) (covalent) #status predicted

Query Match 87.9%; Score 5988; DB 1; Length 1260;
 Best Local Similarity 87.7%; Pred. No. 1.3e-241;
 Matches 1103; Conservative 50; Mismatches 102; Indels 2; Gaps 2;

Qy 1 MELAALCRWGLLLALLPPGAASCTVCTGDMKRLPASPETHDMLRHLYQGCGVQGNL 60
 Db 4 MELAAWCRWGLLLALLPPGIAGTQVCTGDMKRLPASPETHDMLRHLYQGCGVQGNL 63
 Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHQNVRQVPLQRLIRVGTQLFEDNYALAVLDNG 120
 Db 64 ELTYVPPANASLSFLQDIQEVQGYVLIHQNVRQVPLQRLIRVGTQLFEDNYALAVLDNR 123
 Qy 121 DPLNNTTTPVT-GASPGGLRELQRLSLTEILKGGVLIQIRNPOLCYODTILWKDIFHKNNQL 179
 Db 124 DPQNVAASTPGRTPEGRLRELQRLSLTEILKGGVLIIRGNPOLCYODVWLWMDVFRKNNQL 183
 Qy 180 ALTLIDNRSRACHPCSPMKSGSRGSESDCQSLTRTVCCAGCARCKGPLEPTDCCHEQ 239
 Db 184 APVDIDNRSRACPPCAPACKDNHCWGESPEDCQILGTICTSGCARCKGRLPTDCCHEQ 243
 Qy 240 CAAGCTGPKISDCLACLHFNHSGICELHCPALVYNTDTFESMNPNGRYTFGASCVTAC 299
 Db 244 CAAGCTGPKISDCLACLHFNHSGICELHCPALVYNTDTFESMNPNGRYTFGASCVTTC 303
 Qy 300 PNYLSTDVGSCTLVCPPLHNOEVTAEQTCRCKSPCARVCYGLGMEHLREVRVTS 359
 Db 304 PNYLSTEVGSCTLVCPPLHNOEVTAEQTCRCKSPCARVCYGLGMEHLRGARLTS 363
 Qy 360 NIOEFAGCKIFGSLAFELPESFDGDPASNTAPLQEQVFTLEETIYLYISAWPDSL 419
 Db 364 NVQEFDCCKIFGSLAFELPESFDGDPSSGIAPLRLPEQLQVFTLEETIYLYISAWPDSL 423
 Qy 420 PDLVSFQNLQVIRGILHNGAYSITLQGLGSIWGLSLRLSGLALIHNTLHLCFVHT 479
 Db 424 RDLVSFQNLRIIRGILHNGAYSITLQGLGSIWGLSLRLSGLALIHNTLHLCFVHT 483
 Qy 480 VPWDLFRNPHQALLHTANRPEDS-CYGEGLACHOLCARGHCWGPPTQCVNCSQFLRGQ 538
 Db 484 VPWDLFRNPHQALLHSGNRPEEDLCVSSGLVNCNLCAHGCWGPPTQCVNCSHFHURGQ 543
 Qy 539 ECVEECRVLQGLPREYVNRHCLPCHPECPQNGSVTCFGEADQCVACAHYKDPFPCVA 598
 Db 544 ECVEECRVWGLPREYVSDKELPCHPECPQNSSETCFGEADQCAAHYKDSSCVA 603
 Qy 599 RCPSGVKPDLSYMPIWKPDPBEGACQPCPINCTHSCVDLDDKGPCAFQASPLTSIVASV 658
 Db 604 RCPSGVKPDLSYMPIWKPDPBEGICQPCPINCTHSCVDLDBRGCPAQASPVTFIATV 663
 Qy 659 VGILLVVVLGVVFGILIKRQOKIRKYTMRELLQETELVEPLTPSGAMPNQAQRILKET 718
 Db 664 EGVLLFLLVVVVGILLIKRRQOKIRKYTMRELLQETELVEPLTPSGAMPNQAQRILKET 723
 Qy 719 ELRKVKVLGSGAFVTVKGIWIPGENVKIPVAIKVLRNTPSKANKEILLDEAVYMAVG 778
 Db 724 ELRKVKVLGSGAFVTVKGIWIPGENVKIPVAIKVLRNTPSKANKEILLDEAVYMAVG 783
 Qy 779 SPYVSRLLIGICTSTVOLVTQMPYGLLDHVRNRRGLSGQDILLNMCQIAGMSYLE 838
 Db 784 SPYVSRLLIGICTSTVOLVTQMPYGLLDHVRHRRGLSGQDILLNMCVQIAGMSYLE 843
 Qy 839 VRLVHRDLAARNVLKSPNHVKITDRLGLARLLDIDETEHADGKVPKWMALSIILRR 898
 Db 844 VRLVHRDLAARNVLKSPNHVKITDRLGLARLLDIDETEHADGKVPKWMALSIILRR 903
 Qy 899 FTHQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYMIWVK 958

Db 904 FTHQSDVMSYGVTVWELMTFGAKPYDGIPIAREIPDLLEKGERLPQPPICTIDVYMIWVK 963
 Qy 959 WMTDSECRPFRELVSSEFSRMARDPQRFVVIQNEDLGPASPLDSTFVRSILLEDDMGDLV 1018
 Db 964 WMTDSECRPFRELVSSEFSRMARDPQRFVVIQNEDLGPSSPMDSTFVRSILLEDDMGDLV 1023
 Qy 1019 DAEYLVPOQGFPCPDPAAGAGGMVHRHSSSTRSGGDLTLGLEPSEBEAPRSLAPS 1078
 Db 1024 DAEYLVPOQGFSPDPTGTAHRRHSSSTRSGGELTLGLEPSEBPPRSLAPS 1083
 Qy 1079 EGAGSDVFDGDLGWAAGKLSLPTHDPSPLQYSEDPTVPLPSETDGYVAPLTCSPQPE 1138
 Db 1084 EGAGSDVFDGDLGAVGTGKLSLPHDLSPLQYSEDPTLPLPETDGYVAPLACSPQPE 1143
 Qy 1139 YVNPQVVRPQPPSPRSGPLPAARPGATLERAKTILSPKNGVVKDVFAGGAVENPEVLT 1198
 Db 1144 YVNSQEVQPPPLTPGGLPFPVPAGATLERKTLSPKNGVVKDVFAGGAVENPEVLT 1203
 Qy 1199 PQGGAAPQPPHPPAFPAFNDLYWQDPPERGAAPPSTFKGTPTAENPEYLGLDVVP 1255
 Db 1204 PRSGTASPSPHPSAFPAFNDLYWQNSSEQPPPSNFEGTPTAENPEYLGLDVVP 1260

RESULT 3
 I48161
 p-185 precursor - golden hamster
 C:Species: Mesocricetus auratus (golden hamster)
 C>Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
 C/Accession: I48161
 R:Nakamura, T.; Ushijima, T.; Ishizaka, Y.; Nagao, M.; Araki, M.; Yamazaki, Y.; Ishikawa
 Gene 140, 251-255, 1994
 A:Title: Cloning and activation of the Syrian hamster neu proto-oncogene.
 A:Reference number: I48161; MUID:94193007; PMID:7908275
 A:Accession: I48161
 A>Status: preliminary; translated from GB/EMBL/DBJ
 A:Molecule type: mRNA
 A:Residues: 1-1254 <RES>
 A:Cross-references: UNIPROT:Q60553; GB:D16295; NID:g493236; PIDN:BAA03801.1; PID:g74759
 C:Gene: neu
 A:Gene: neu
 C:Superfamily: epidermal growth factor receptor; protein kinase homology
 C:Keywords: ATP
 F:718-983/Domain: protein kinase homology <KIN>
 F:726-734/Region: protein kinase ATP-binding motif

Query Match 87.9%; Score 5984.5; DB 2; Length 1254;
 Best Local Similarity 87.6%; Pred. No. 1.8e-241;
 Matches 1099; Conservative 58; Mismatches 97; Indels 1; Gaps 1;

Qy 1 MELAALCRWGLLLALLPPGAASCTVCTGDMKRLPASPETHDMLRHLYQGCGVQGNL 60
 Db 1 MELAAWCRWGLLLALLSPGASGTQVCTGDMKRLPASPETHDMLRHLYQGCGVQGNL 60
 Qy 61 ELTYLPTNASLSFLQDIQEVQGYVLIHQNVRQVPLQRLIRVGTQLFEDNYALAVLDNG 120
 Db 61 ELTYLPTNASLSFLQDIQEVQGYVLIHQNVRQVPLQRLIRVGTQLFEDNYALAVLDNR 120
 Qy 121 DPLNNTTTPVTGASPGGLRELQRLSLTEILKGGVLIQIRNPOLCYODTILWKDIFHKNNQL 180
 Db 121 DPLDNVTATGRTPEGLRELQRLSLTEILKGGVLIIRGNPOLCYODTILWKDIFRKNQL 180
 Qy 181 LTILIDNRSRACHPCSPMKSGSRGSESDCQSLTRTVCCAGCARCKGPLEPTDCCHEQ 240
 Db 181 FVDIDNRSRACPPCAPACKDNHCWGESPEDCQILGTIAPRAVPAARLPTDCCHEQ 240
 Qy 241 AAGCTGPKISDCLACLHFNHSGICELHCPALVYNTDTFESMNPNGRYTFGASCVTAC 300
 Db 241 AAGCTGPKISDCLACLHFNHSGICELHCPALVYNTDTFESMNPNGRYTFGASCVTTC 300
 Qy 301 YNYLSTDVGSCTLVCPPLHNOEVTAEQTCRCKSPCARVCYGLGMEHLREVRVTSAN 360
 Db 301 YNYLSTEVGSCTLVCPPLNNOEVTAEQTCRCKSPCARVCYGLGMEHLRGARLTSAN 360

A;Note: the EGF receptor (and other tyrosine kinases) can nick double-stranded DNA
 R;Chen, W.S.; Lazar, C.S.; Lund, K.A.; Welsh, J.B.; Chang, C.P.; Walton, G.M.; Der, C.J.
 Cell 59, 33-43, 1989
 A;Title: Functional independence of the epidermal growth factor receptor from a domain
 A;Reference number: A33331; MUID:9003233; PMID:2790960
 A;Contents: annotation; internalization signal
 C;Comment: Binding of EGF to the receptor leads to internalization of the EGF-receptor
 C;Genetics:
 A;Gene: GDB:EGFR
 A;Cross-references: GDB:120610; OMIM:131550
 A;Map position: 7p12.3-7p12.1
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein; phospho
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;25-1210/Product: EGF receptor #status predicted <MAT>
 F;25-645/Domain: extracellular #status predicted <EXT>
 F;75-300/Domain: EGF receptor extracellular domain repeat <BE1>
 F;390-600/Domain: EGF receptor extracellular domain repeat <BE2>
 F;646-668/Domain: transmembrane #status predicted <TM>
 F;669-1210/Domain: intracellular #status predicted <INT>
 F;710-975/Domain: protein kinase homology <KIN>
 F;718-726/Region: protein kinase ATP-binding motif
 F;999-1046/Region: coated-pit mediated internalization signal
 F;1047-1210/Region: inhibitory
 F;128,175,352,413,444,528,603/Binding site: carbohydrate (Asn) (covalent) #status predic
 F;745/Active site: Lys #status experimental

Query Match 46.58; Score 3168; DB 1; Length 1210;
 Best Local Similarity 49.88; Pred. No. 1.6e-124;
 Matches 630; Conservative 178; Mismatches 351; Indels 106; Gaps 21;
 QY 11 LLAALLPPGAA--STOVCTGDMKRLPASFPETHDMLRHLQYCCVQVQGNLELTPLTN 68
 DB 14 LLAALCPASRALEKKVCQSTSNKLTQLGTFEDHFLSLQRFNCEVVLGNLEITVQVN 73
 QY 69 ASLSFLQDIQEVGYVLIANQVQVPLQRLRIVRGTLQFEDNYALAVLDNGPLNNTTP 128
 DB 74 YDLSFLKTIQEVAGYVLIANTVERIPLENLQIRGNMYENSVALAVLSNYD----- 126
 QY 129 VTGASFGELQELQSLTEILKGVLIQVLPOLYQDTILWKDIFKNNQLATLIDTNR 198
 DB 127 ---ANKTGLKELPMRNLQELHGAVRPSNPALCNVESIQMRDIVSDFLSNMMDPQNH 193
 QY 189 SRACHPCSPMCKGSRWGESSEDCQSLRTVTCAGGA-RCKGPLPTDCHEQCAAGCTG 247
 DB 184 LGSQCRDPCSPNGSCWAGEENCQKLTIKIQAQCSGRCRGKSPSDCCNQAAGCTGP 243
 QY 248 KHSDCLACHFNHSGICELHCPALVYNTDTFSPMPNPEGRTYFGASCVTACPYNYLSTD 307
 DB 244 RESDCLVCRFRDEATCKDTPPLMLNPTTYQMDVNPNEGKYSFGATCVKKCPRYVVD 303
 QY 308 VGSCTLVCLPHNOEVAEDGTQRCCKSKPCARVCYGLGNEHLREVRVNTSNIQEPAGC 367
 DB 304 HGSVCVACGADSYEM-EEDGVKCKKCEGPCRVCGIGIGFQKDSINATNIRKIFNC 362
 QY 368 KTFGLSLAFPSFDGDPASNTAPLOEQVQFETLEEITGLYVIAWPSDLSVFN 427
 DB 363 TSSISGLHLPLVAFRGDSFTHTPDQELDLTKVKEITGFLLIQWPNERTDLAFEN 422
 QY 428 LQVIRGRILHNGAYSITLQGLISWGLRLSLRBLGGLAIHNTLHCFVHTVPQDLFR 487
 DB 423 LEIIRGRTKHQGFSLAVVSLNITSLSRLSLKISDGDVVISGNKNCYANTINWKKLFG 482
 QY 488 NPHQALLHTANRDEDECVGSLACHQICARGHCWGPCTQVNCQSLRQECVEECVRL 547
 DB 483 TSGQTKTISNRGNSCKATGQVCHALCSPEGCWGPEDPCVCRNVSREGVCDKCLK 542
 QY 548 QGLPREVYNARHCLPCHPECPQNGSVTCFGEADQVACAHYKDPFPCVACPSGVKPD 607
 DB 543 EGEPRFEVENSEICIQHPECLPQAMNITCTGRGPDNCIQAHYIDGPHCVKTCPCAGWME 602
 QY 608 LSYMPIWKFPDEBAGACQPCPINCTHSCVDLDDKGCFAEQRASPLTSIVSAVVG---ILLV 664

603 NNTL-VMKYADAGHVCHLCPNCTYCTGPGLEGCTNGPKIP--SIATGMGALLLLV 659
 QY 665 VLVGVVFGILLIKERQKIRKYTWRRLLQETELVEPLTPSCAMPNQOAMRILKETELKVK 724
 DB 660 VALGIG---LFMRRRHVVRKTRURRLLQERELVEPLTPSGEAPNQALLRILKETEFKKIK 716
 QY 725 VLGSAGFTYVYKIGWIPDGENVKIPVAIKVLRNTPSKANKEILDEAYNVAGVSPVSR 784
 DB 717 VLGSAGFTYVYKGLMPEGEKVKIPVAIKELREATSPKANKEILDEAYNVASVDNPHVC 776
 QY 785 LIGICLTSTVQLVTLQMPYGCILLDHVRNRRGLSGQDLLNWCQIAKMGSYLDEVRVLVR 844
 DB 777 LLIGICLTSTVQLITQLMPFGCLLDYVREHKNDNTGSOYLLNWCQIAKMGNYLDEVRVLVR 836
 QY 845 DLAAARNVLKSPNHNKVTDFGLARLADIDETEYHAGDGKVPKIMMALESILRRFTHQSD 904
 DB 837 DLAAARNVLKTPQHVKITDFGLAKLGAEEKEYHAGGKVPKIMMALESILHRIYTHQSD 896
 QY 905 VMSYGVTVVWELMTFGAKPYDGPAREIPDLLEKGERLPQPPICITIDVYIMVVKWMIDSE 964
 DB 897 VMSYGVTVVWELMTFGSKPYDGPASEISSILEKGERLPQPPICITIDVYIMVVKWMIDAD 956
 QY 965 CRPRFRELVSERMRARDQRFVVIQ-NEDLGPASPLDSTFYRSLLEDDMGDLVDAEY 1023
 DB 957 SRPKFRELITERSKMRDQRFVVIQ-ODERMLPSTDSNFYRALMDEEDMDVDVDAEY 1016
 QY 1024 LVPOQGFPCPDPAAGAGGVHHRSSSTRSGGDLTLGLEPSEEEAPRSPAPSEAGS 1083
 DB 1017 LIPQOQGF-----SSPSTRPPLSSUSATS 1042
 QY 1084 DVFDDGLMGAAKGLQSLPHTDPSPLQYSEDPVPLPSET--DGVVAPLTCSPQPEYVN 1141
 DB 1043 N-NSIVACIDRNLQSCPKEDSFQRYSSDPTGALTEDSIDDTFL-----PVPEYIN 1094
 QY 1142 QPDVRQPPSPREGPLPAARAGATLERAKTISPGKGVVQVFAFGGAVENPEYL-TPQ 1200
 DB 1095 Q-SVPRKPAQSVQNPVYHQPLNP-----APSRDPHYQD--PHSTAVGNPEYLTQV 1143
 QY 1201 GGAAPQHPAPAFSPADNLYWDQ-----DP-----PERGAPSTFGTPTAE 1244
 DB 1144 -----PTCVNSTFDSPAHWAQKSHQISLDNPDYQODFFPKAKPNIGFKGS-TAE 1193
 QY 1245 NPEYL 1249
 DB 1194 NAEYL 1198
 RESULT 5
 A53183
 epidermal growth factor receptor precursor - mouse
 C;Species: Mus musculus (house mouse)
 C;Date: 06-Jan-1995 #sequence revision 06-Jan-1995 #text change 09-Jul-2004
 C;Accession: A53183; A43818; S24942; A28941; S45325; I49643
 R;Luetke, N.C.; Phillips, H.K.; Qiu, T.H.; Copeland, N.G.; Earp, H.S.; Jenkins, N.A.;
 Genes Dev. 8, 399-413, 1994
 A;Title: The mouse waved-2 phenotype results from a point mutation in the EGF receptor
 A;Reference number: A53183; MUID:94170986; PMID:8125255
 A;Accession: A53183
 A;Molecule type: mRNA
 A;Residues: 1-1210 <LUE>
 A;Cross-references: UNIPROT:Q01279; GB:U03425
 R;Avivi, A.; Lax, I.; Ullrich, A.; Schlessinger, J.; Givol, D.; Morse, B.
 Oncogene 6, 673-676, 1991
 A;Title: Comparison of EGF receptor sequences as a guide to study the ligand binding si
 A;Reference number: A43818; MUID:91232866; PMID:2030916
 A;Accession: A43818
 A;Molecule type: mRNA
 A;Residues: 1-714 <AVI>
 A;Cross-references: GB:X59698
 R;Singer, D.P.; Serrero, G.
 submitted to the EMBL Data Library, June 1992
 A;Reference number: S24942
 A;Accession: S24942

A;Molecule type: mRNA
 A;Residues: 969-971, 'K', 973-1115, 'D' <EIS>
 A;Cross-references: EMBL:Z12608
 R;Heisermann, G.J.; Gill, G.N.
 J. Biol. Chem. 263, 13152-13158, 1988
 A;Title: Epidermal growth factor receptor threonine and serine residues phosphorylated
 A;Reference number: A28941; MUID:88330814; PMID:3138233
 A;Accession: A28941
 A;Molecule type: protein
 A;Residues: 689-694, 'X', 696-704, 'L', 706-707, 989-992, 'XX', 995-996, 'X', 998-1000; 1002-1009,
 R;Higgs, M.L.; Dunn, A.R.; Alexander, W.S.
 submitted to the EMBL Data Library, April 1994
 A;Description: The complete cDNA sequence of the Mouse Epidermal Growth Factor Receptor
 A;Reference number: S45325
 A;Accession: S45325
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-971, 'K', 973-1210 <VER>
 A;Cross-references: EMBL:X78987; NID:G488830; PIDN:CAA55587.1; PID:G488831
 R;Faria, B.C.; Das, S.K.; Andrews, G.K.; Day, S.K.
 Proc. Natl. Acad. Sci. U.S.A. 90, 55-59, 1993
 A;Title: Expression of the epidermal growth factor receptor gene is regulated in mouse b
 A;Reference number: I49643; MUID:93126380; PMID:7678348
 A;Accession: I49643
 A;Status: translated from GB/EMBL/DBJ
 A;Molecule type: mRNA
 A;Residues: 12-20, 22-132 <RES>
 A;Cross-references: GB:L06864; NID:g193001; PIDN:AAA53029.1; PID:G567201
 C;Genetics:
 A;Gene: EGFR
 C;Superfamily: epidermal growth factor receptor; protein kinase homology
 C;Keywords: ATP; growth factor receptor; kinase-related transforming protein; phosphop
 F;1-24/Domain: signal sequence #status predicted <SIG>
 F;648-670/Domain: transmembrane #status predicted <TM>
 F;712-977/Domain: protein kinase homology <KIN>
 F;720-728/Region: protein kinase ATP-binding motif
 F;680, 695/Binding site: phosphate (Thr) (covalent) #status experimental
 F;697, 1070, 1071/Binding site: phosphate (Ser) (covalent) #status experimental
 F;993/Binding site: (or 997) phosphate (Ser) (covalent) #status experimental
 F;1028/Binding site: (or 1030 or 1032) phosphate (Ser) (covalent) #status experimental
 F;1197/Binding site: phosphate (Tyr) (covalent) #status experimental

Query Match 46.2%; Score 3144; DB 2; Length 1210;
 Best Local Similarity 49.8%; Pred. No. 1.6e-123; Mismatches 359; Indels 110; Gaps 23;
 Matches 633; Conservative 170;

QY 11 LLLALLPPGAA--STQVCTGDMKRLPASPETHLDMLRLHYQGCQVQGNLELTPLPTN 68
 DB 14 LLTALCAAGALEEKVKVCGQTSNRLTQLGTFEDHFLSLQRMVNNCEVLGNLEITVQRN 73
 QY 69 ASLSFLQDIOEVGYVLIANNQVQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTP 128
 DB 74 YDLSFLKTIQEVAGYVLIANNQVQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTTP 124
 QY 129 VTGASPGLELEQLRSITELKGVLIQVNPQLCYODTILWKDI----FHKNQLALTLI 184
 DB 125 -YGNTRTGLRPLMRLNQLIIGAVRPSNPILCNMDTIQWRDIQVNVFNSNMDL---- 180
 QY 185 DTRNSRACHPCSPMKSCRCWGSSEDCQSLRTVCAGGCA-RCKGPLEPTDCHEQCAAG 243
 DB 181 -QSHPSCKPCDPSCPNCSWGGEENCQKLTIKIICAAQCSCRCGRSPSCDCHNCAAG 239
 QY 244 CTGPKSDCLACLHPNHSGLCELHCPALVTYNTDTFESMPNPGRTTFGASCVTACPNY 303
 DB 240 CTGPRESDCLVQKQFQDEATCKDTCPLMLYNPTTYQMDVNPPEKYSFGATCKKCPRY 299
 QY 304 LSTDVSGCTLVCLPHNVEAEDGTORCEKSCPKARVCVGLGWEHLRVAVTSANIOE 363
 DB 300 VVTDHSGCVACGPDYEV-EEDGIRKCKDGFCKVCNGIGIGFEKDTLSINATNIKH 358
 QY 364 FAGCKITGSLAFIPESFGDGPASNTAPLOEQVFETLEETIGYLYISAWPDSLPDLS 423
 DB 359 FKYCTAISGLHILPVAFKGDSFRTPLDPLPRELEILKTVKEITGTGFLIIQAWPDNWDLH 418

RESULT 6

TVCHLV

epidermal growth factor receptor precursor - chicken

N;Contains: protein-tyrosine kinase (EC 2.7.1.112) erbB

C;Species: Gallus gallus (chicken)

C;Date: 28-Feb-1986 #sequence_revision 05-May-1995 #text_change 09-Jul-2004

C;Accession: A27720; A00643

R;Fax, I.; Johnson, A.; Howk, R.; Sap, J.; Bellot, F.; Winkler, M.; Ullrich, A.; Vennet

Mol. Cell. Biol. 8, 1970-1978, 1988

A;Title: Chicken epidermal growth factor (EGF) receptor: cDNA cloning, expression in mo

A;Reference number: A27720; MUID:88261272; PMID:3260329

A;Accession: A27220
A;Molecule type: mRNA
A;Residues: 1-1223 <LAX>
A;Cross-references: UNIPROT:P00534; GB:M20386
R;Nilsen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Crittenden, L.B.; Raines, M.
Cell 41, 719-726, 1985
A;Title: c-erbB activation in ALV-induced erythroblastosis: novel RNA processing and p185
A;Reference number: A00643; MUID:85228222; PMID:2988784
A;Accession: A00643
A;Molecule type: mRNA
A;Residues: 585-1223 <NLL>
A;Cross-references: GB:M10066
C;Genetics:
A;Gene: erbB
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: alternative splicing; ATP; autophosphorylation; glycoprotein; growth factor
specific protein kinase
F;31-30/Domain: signal sequence #status predicted <SIG>
F;31-1223/Product: epidermal growth factor receptor #status predicted <MAT>
F;31-654/Domain: extracellular #status predicted <EXT>
F;81-307/Domain: EGF receptor extracellular domain repeat <E1>
F;357-610/Domain: EGF receptor extracellular domain repeat <E2>
F;655-677/Domain: transmembrane #status predicted <TM>
F;678-1223/Domain: intracellular #status predicted <INT>
F;719-984/Domain: protein kinase homology <KIN>
F;727-735/Region: protein kinase ATP-binding motif
F;136,202,280,361,370,422,575,580,615,635/Binding site: carbohydrate (Thr) (covalent) #
F;132,650/Binding site: carbohydrate (Ser) (covalent) #status predicted
F;687/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status predicted
F;754/Active site: Lys #status predicted
F;1100,1183,1208/Binding site: phosphate (Tyr) (covalent) (by autophosphorylation) #stat

Query Match 45.9%; Score 3123.5; DB 1; Length 1223;
Best Local Similarity 48.7%; Pred. No. 1.le-122; Mismatches 345; Indels 145; Gaps 25;
Matches 632; Conservative 175;

Qy 8 RWGLLALLPPGAA-----STVCTGTDMLRLPASPEHDLMLRLHYGCGVQVGNLE 61
Db 13 RGAVALVLLLLGVALCSAVEKKVCGQTNKKLTQLGHVEDHFTSLQRMVNCVVLNLE 72
Qy 62 LTYLPTNASLSFLDIOEVOGYVLIANNQVRQPLQLRLVRGQLPFDNYALAVLNDG 121
Db 73 ITVEHRDLTFLKTIQEVAGYVLIANNVQVPLENLIQIRGNVLYDNSPALAVLSNH 132
Qy 122 PLANTTPTVTCSPGLRELQLRSLEILKGVLIORNPOLCYQDTILWKDIFHKNQAL 181
Db 133 -MNTQ-----GLRELPMKRLSEILNGVKLSNNPKLNDMTVLWNDIITSRK-PL 182
Qy 182 TLID-TNRSRACHPCSPMCKSGRCSGESSDCQSLTRTVCAAGCA-RCKGPLPTDCCHEQ 239
Db 183 TVLDFASNLSSCPKCHPNCETHCWGAGEQNCQLTKVICAQCCSGRCRGKVPSCCHQ 242
Qy 240 CAAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMNPREGRYTFGASCVTAC 299
Db 243 CAAGCTGPRSDCLACRFKRDATCKDTCPLVLYNPTTYQMDVNPBGKYSFGATCVR 302
Qy 300 PYNVLTDSVCSCLVPLHQVETAEQTCERCKSPCARVCYVGLGWEHLREVRATISA 359
Db 303 PHNVTVTHGSCVRSNCMTDTEVE-EENGVRCKCKDGLCKSVKNGIGELKGLSLNAT 361
Qy 360 NIQFAGCKKIFGSLAFPLPESFDGDPASNTAPLOEQLQVPELLEITGVLYISAWPDSL 419
Db 362 NIDSKNCTKINGDVSLPVAFLGDAFTKTLPLDPKLDVFTVKEISGFLLIQAWFDNA 421
Qy 420 PDLVSFQNLQVIRGILHNGAYSUTLQGLGISWGLRSLRGLSGLALIHNTLCFVHT 479
Db 422 TDLYAFENLEIIRTKRHQGOYSLAVNLKIQSLGLSLRSLKLEISDGDIAIMKNKLCYADT 481
Qy 480 VPMDLFRNPHQALLHTANRPEDSCVGEGLACHOLCARGHCWGPGPTQCVNCSQPLRQE 539
Db 482 MNMRSLSATOSQTKYTIQNRKNKNDCTADRHVCDPLSDVGCWGGPFPCHCFRFFSROKE 541
Qy 540 CVERCVLQGLPREYVYVNAHCLPCHPECPQNG---SVTCFPGPADQCACAHYKDPFC 596

Db 542 CVKQCNILQGEPRFERDSKCLCHSECLVQNSTAYNTTCSGPGDPDHCMCAHFDIDPHC 601
Qy 597 VARCPGSKVDPLSYMFIWKPDEGACQPCPINCTHSCVDLDDKGCBAEQRASPLTISVS 656
Db 602 VKACPAVGLGENDTL-VMKYADANAVCQLCHPCTRGCCKPGLEGCP---NGSKTPSIAA 657
Qy 657 AVY-GILLVVVLGVVFGILLIKRQOKRKVTMRLLQETELVPLTSPSGAMPNQAORIL 715
Db 658 GVVGGLLCLVVGLGILYLRRL-HIVRKTLRLQLQRELVEPLTSPSGAPNAQHURL 716
Qy 716 KETELRKVKYLGSGAFGTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYMA 775
Db 717 KETEFKVKVKGSGAGFTVYKGLWIPBEKVKIPVAIKELREATSPKANKEILDEAYMA 776
Qy 776 GVCSPPYVRLGLICLTSTVOLVTQLMPYGLLDHVRNRLGSLQDILLNMCQIAKMSY 835
Db 777 SVDNPHVCRLLGLICLTSTVOLITQLMPYGLLDYIREHKNIGSYQLLNCVQIAKMGY 836
Qy 836 LEDVRLVHRDLAARNVLKSPNVKITTDFGLARLLDIDETEHADGKVPKWMALSESIL 895
Db 837 LEERLVHRDLAARNVLVKTPOHVKITDFGLAKLGNDEKEYHAEKGKVPKWMALSESIL 896
Qy 896 RRRFTHQSDVMSYGVTVWELMTFCAPYDGIPIAREIPDLLEKGERLPQPPICTIDVYIM 955
Db 897 HRIYTHQSDVMSYGVTVWELMTFCSPYDGIPIASEISSVLEKGERLPQPPICTIDVYIM 956
Qy 956 VKCMTDSECRPRELVEFSFMRMDPQRFVVIQ-NEDLGPASPLDSTFYRSLLEDDDM 1014
Db 957 VKCMTDADSRKPRELIAEFAFVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQVQV 1016
Qy 1015 GDVDAEYLVPQGGFCPPAPGAGGMVHRHRSSTRSGGDLTLGLSPSEEAARSP 1074
Db 1017 EDIVDAEYLVPQGGF-----NSPST-----SRTP 1042
Qy 1075 L-----APSEGAGSDVFDGLMGAAKGLQSLPHTDPSLPQRYSEDPTVPLPSET--DGY 1127
Db 1043 LLSLSLATSNNSATNCID-----RNGQGHVREDSPVQYSSDPTGNFLEBSIDGDF 1094
Qy 1128 VAPLTCSPQEVYQV 1185
Db 1095 L-----PAPEYVQ--LMPKPS-----TAMVQNYNNISLT 1125
Qy 1186 -----AFGAVENPEYLTPOGGAAQPPHPPAFSPAFDNLVYWDQ----- 1225
Db 1126 AISKLPMSRYQNSHSTAVDNPEYL-----NTQSPKLVTFVSSPIWQSGNHOIN 1177
Qy 1226 -DPPE-----RGAPPSTFKGTFTAEENPEYLGIDVP 1254
Db 1178 LDNPDYQDPLPNETKPNGLLVKPAENPEYLVAAAP 1214

RESULT 7

A47253
epidermal growth factor receptor, HER4 - human
C;Species: Homo sapiens (man)
C;Date: 22-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004
C;Accession: A47253
R;Plowman, G.D.; Culouscou, J.M.; Whitney, G.S.; Green, J.M.; Carlton, G.W.; Foy, L.; N.
Proc. Natl. Acad. Sci. U.S.A. 90, 1746-1750, 1993
A;Title: Ligand-specific activation of HER4/p180erbB4, a fourth member of the epidermal
A;Reference number: A47253; MUID:93189574; PMID:8383326
A;Accession: A47253
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: nucleic acid
A;Residues: 1-1308 <PLO>
A;Cross-references: UNIPROT:Q15303; GB:L07868; NID:G337359; PIDN:AAB59446.1; PID:G33736
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; growth factor receptor
F;716-981/Domain: protein kinase homology <KIN>
F;724-732/Region: protein kinase ATP-binding motif

Db 123 YQK- NPSP--DVTQVGLKQLQNLTEILSGVGVKSHNPILLCNVETINWMDIVDKTSNP 179
QY 180 ALTLDITNRSRACHPCSPMCKSGSCWGESSEDQSLRTVCAGGC-ARCKGPLPTDCCHE 238
Db 180 TMLLI PHAFERQCKQKDHGCVNGSCWAPGCHCQKFTKLCAEQNRCRCRGPFDICNE 239
QY 239 QCAAGCTGPKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVTA 298
Db 240 HCAGGCTGPRATDCLACRDFNDGCTCPTPPKIYDIVSHQVVDNENIKYTFGAACVKE 299
QY 299 CPYNLYSTDVSGCTLVCPHLNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTS 358
Db 300 CPSNVVTE-GACVRSAGMLEVD-ENGRSRCKPCDGVCPKVGIGIGISLNTIAVNS 357
QY 359 ANIOFAGCKKIFGSLAFLESFGDGPASNTAPLOPELOVFEITGLYISAWPDS 418
Db 358 TNIRSFNCTKINGDIILNNSFGEDPHYKIGTMDPEHLNLTIVKSEITGLYIWWPEN 417
QY 419 LPDLSVFQNLQVIRGRILHNGAYS-LTQGLGISWLGLRLSLRELGLSLIHHNTHLCFV 477
Db 418 MTSLSVFQNLLEIRGRTTFSGFSFVVQVRHLQWLGLRLSLKEVSAGNVILKNTLQLRYA 477
QY 478 HTVPWDOLFNPQALLHTANRDECEVGEGLACHQICARGHCWGPPTQCVNCSQFLRG 537
Db 478 NTINWRRLFRSEDQSIYDART-----ENQTCNNECEDGCW-PGPTMCVSLHYDRG 529
QY 538 QECVECKVLQGLPREVYNARHCLPCHPEQOPQNGSVTCRGPADQCAHAYKDPFPV 597
Db 530 GRCVASNLQGEPRQAQVGRQVCHQECVLVQDSUTCYGGPANCKSAHFQDGGQCI 589
QY 598 ARCPGSGVKPDLSPYMIWKFPDEEGACQPCINCTHSCVDLDDKCPAERASPLTISVA 657
Db 590 PRCPHGILGDDTL-INKVADKMGQCPCHQNCCTGCGSGPLSGCRGD-IVSHSLAVGL 647
QY 658 VGLLVVVLGVVFGIILKROQKIRKYWRLLQETELVEPLTPSGMNPQAMRLKE 717
Db 648 VSGLLITVIVALLIWLRLRRRIK-RKRTIRCLLQEXELVEPLTPSGAQNQAFRLKE 706
QY 718 TELRKVVLGSGAFVGTGVIWIPDGENVKIPVAIKVLRNTSPKANKEILDAYVMAGV 777
Db 707 TEFKDRLVLSGAFVTVKGLWPDGNIIRIPVAIKVLRATSPKNQEVLDDEAYVNASV 766
QY 778 GSPVSRLLGICLTSTVQLVQMPYGLCLLDHVRNRRGLSGDQLLNCMQIAKMSYLE 837
Db 767 DHPHVCRLGICLTSAVOLVQMPYGLCLLDYVRHQERICGQWLLNWCQIAKMWYLE 826
QY 838 DVLRLVHRDLAARNVLKSPHVKITDFGLARLLDIDETEHADGGKVPKIKWMALESILRR 897
Db 827 ERLVHRDLAARNVLLKNPNHVKITDFGLSKLLTADEKEYQADGGKVPKIKWMALESILQ 886
QY 898 RPTHQSDVWSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPICTIDVYIMVK 957
Db 887 TYTHQSDVWSYGVTVWELMTFGSPYDGIIPAKETASVLENGERLPQPICTIEVYIILK 946
QY 958 CWMIDSECRPRFRELVSFSEMRARDPQRFVVIQNIQEDLGASPLDSTFYRSLLEDQDMDGL 1017
Db 947 CWMIDPSRRPRFRELVEFSEMRARDPSYLVIQG---NLPSLSDRLRFSLLSSDD---DV 1001
QY 1018 VDAEYLVPQOGFCPPDPAPGAGWVHRHRSSTRSGGGDLTLGLEPSEEEAPRGLAP 1077
Db 1002 VDAEYLLPYKRI-----NRQGS-----BPCIP 1024
QY 1078 SEGAGSDVFDGLMGAAKGLQSLPTHDPSPLOQYSEDPTV-PLPSETDGVVAPLTCSPQ 1136
Db 1025 PTHG-----PVRENSITURNISDPTQNALBKDLQGH----- 1055
QY 1137 PEYVQPDVRPQP-----PSPRE-----GPLP-AARPACATLERAKTILSPGKNGVVKD 1183
Db 1056 -EYVNPQSETSRSLSDIYNPNYEDLTDGWPVLSLQSEAEATFSPREYLTNQNLSL--- 1111
QY 1184 VFAPGAVENPEYLTPOGGAAPQHPPPAPSPADNLYYWDQPPERGAAPPSTFKGTPTA 1243
Db 1112 PLVSSGSMDDPDY---QAG-----YQAAF-----LPQTGALTNGMFLPAA 1149

QY 1244 ENPEYLG 1250
Db 1150 ENLEYLG 1156

RESULT 9

A36223
C:Species: Homo sapiens (man)
C>Date: 04-Oct-1991 #sequence_revision 13-Jan-1993 #text_change 09-Jul-2004
C/Accession: A36223; I59164
R/Kraus, M.H.; Ising, W.; Miki, T.; Popescu, N.C.; Aaronson, S.A.
Proc. Natl. Acad. Sci. U.S.A. 86, 9193-9197, 1989
A>Title: Isolation and characterization of ERB3, a third member of the ERBB/epidermal growth factor receptor-tyrosine kinase-related transforming protein (erbB3) (EC 2.7.1.-) precursor - human
A/Reference number: A36223; MUID:90083234; PMID:2687875
A/Accession: A36223
A/Status: preliminary
A/Molecule type: mRNA
A/Residues: 1-1342 <KRA>
A/Cross-references: UNIPROT:P21860; GB:M29366
R/Plowman, G.D.; Whitney, G.S.; Neubauer, M.G.; Green, J.M.; McDonald, V.L.; Todaro, G.J.
Proc. Natl. Acad. Sci. U.S.A. 87, 4905-4909, 1990
A>Title: Molecular cloning and expression of another epidermal growth factor receptor-tyrosine kinase-related transforming protein (erbB3), a third member of the ERBB/epidermal growth factor receptor-tyrosine kinase-related transforming protein (erbB3) (EC 2.7.1.-) precursor - human
A/Reference number: I59164; MUID:90311312; PMID:2164210
A/Accession: I59164
A/Status: preliminary; translated from GB/EMBL/DBJ
A/Molecule type: mRNA
A/Residues: 1-559, 'G', 561-957, 'F', 959-1063, 'G', 1065-1342 <RES>
A/Cross-references: GB:M34309; NID:g183990; PIDN:AAA35979.1; PID:g306841
C/Genetics:
A/Gene: GDB:ERB3; HER3
A/Cross-references: GDB:119880; OMIM:190151
A/Map position: 12q13-12q13
C/Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase homolog
C/Keywords: ATP; phosphotransferase
F/707-972/Domain: protein kinase homology <KIN>
F/715-723/Region: protein kinase ATP-binding motif

Query Match 35.7%; Score 2431.5; DB 2; Length 1342;
Best Local Similarity 40.7%; Pred. No. 6.8e-94;
Matches 533; Conservative 191; Mismatches 458; Indels 129; Gaps 32;

QY 10 GLLLALLPPGAA--STQVCTGTDMLRPLASPETHLMLRHLVYGGQVGVGNLELTLYLPT 67
Db 11 GLLFSLARGSEVNSQAVCPGTLNGLSVTGDAENQVTLKLYRCEVVMGNLEIVLTGH 70
QY 68 NASLSFLQDIQEVQGVLYIAHNQVRQVPLQRLRIVRGTLQFEDNYALAVLDNGDPLNNTT 127
Db 71 NADLSFLQWIREVTGVVVMANFESTLPLNLRVVRGTQVYDGKFAIFVM----LNYNT 125
QY 128 PVTGASPGGLRELQLRSLTEILKGVLIQRNPOLCQVDTLLWKDIFHNNQLALTLDITN 187
Db 126 ----NSSHALRQLRLQLTEILSGVYIEKNDKXCHMDTIDMRD---AEIVVKD 178
QY 188 RSRACHPCSPMCKSGSCWGESSEDQSLRTVCAGGC-ARCKGPLPTDCCHCECAAGCTG 246
Db 179 NGRSCPPCHEVCKG-RWPGGSEDCQTLTKTIICAPQNGHCFGPNPQCCHDECAGCGSG 237
QY 247 PKHSDCLACLFHNSGICELHCPALVYNTDTFESMPNPEGRYTFGASCVYACPYNYLST 306
Db 238 PQDITDCACRHFNDSGACVPRCPQPLVYNKLTQLFEPNHTKYQYGGCVASCNPFV-V 296
QY 307 DVGSCITLVPLHNQEVTAEDGTORCEKSKPCARVCYGLGMEHLREVRVTSANIQEFAG 366
Db 297 DQTSVCVRACPPDKRVEVD-KNGLKWCPCGCLCPKACEGTGSG--SRFQTVDDSSNIDGFVN 353
QY 367 CKKIFGSLAFLESFGDGPASNTAPLOPELOVFEITGLYISAWPDSLPDLSVQ 426
Db 354 CTKILGNLDFLTGLNGDPMHKIPALDPEKLVFRVITREITGLYINQSWPPHMFNSVFS 413
QY 427 NLQVIRGRILHNGAYS-LTQGLGISWLGLRLSLRELGLSLIHHNTHLCFVHTVPMQDL 485

Db 414 NLTTIGRSLYNRGFSLLIMKNLNVTSIGFRSLKEISAGRIYISANRQLCYHSLNWTKV 473
 QY 486 FRNPHQALLHTA-NRDEDECVEGLACHOLCARGCHWGPGTQVCNCSOFLRQBCVEBC 544
 Db 474 LRGPTEERLDIKHNRPRDCVAEGRKVCDFLCSGGCGWPGGQCLSCRNSRGVGVCTHC 533
 QY 545 RVUQGLPREYVVARHCLPCHPEQOPQNGSVTCFPGPEADOCVACHYKDPFPCVAPCSGV 604
 Db 534 NFLNGEPREFAHAEFCFCHPEQOPMEGTATCNGSGSDTCAQCAHFRDPGHCVCSPHGV 593
 QY 605 KPDLSYMPYIKWFPDEBAGACQPCPINCHSGCDVDDKGCFAEQRRA-----SPLTSIYSAVVG 660
 Db 594 LG--AKGPIYKYPDVQNECRPCHECTQCGKGPBELQCLGQTLVLIGKTHLTWALTVIAG 651
 QY 661 ILLVVLGVVFGILLIKRQOKIP-KYMERLLOETELVEPLTPSGAMPNQAQMRILKETE 719
 Db 652 --LWVIFMLGTLGYWRGRRIONKRAMRYLERGESIEPLDPS-EKANKVLARIPKETE 708
 QY 720 LRKVKVLSGAGFVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAVVMAGVGS 779
 Db 709 LRKLKVLGSGVFGTVHKGWIPGESIKIPVCIKVIEDKSGRQSFQAVTDHMLAIGSLDH 768
 QY 780 PYVSRLLGICLTSTVQLTQMLPYGCLLDHVRNRRGLSGODLLNMCQIAKMSYLEDV 839
 Db 769 AHIVRLGLGCPGSSQLVTOYLPLGSLLDHVRQHRGALGPQLLLNMGVQIAKMGWYLEEH 828
 QY 840 RLVRDLAARNVLKSPNHVKITDFGLARLLDIDETEHADGKVPDKWMALESILRRFP 899
 Db 829 GMVHRNLAARNVLKSPQVADFGVADLLPPDDKQLLYSEAKTIPKMALESIHFGKY 888
 QY 900 THOSDVMSGYVTWELMTFGAKYDGIIPAREIPDLEKGERLPPOPICTIDVYMIWVKW 959
 Db 889 THOSDVMSGYVTWELMTFGAEYAGRLAEVDPDLLEKGERLAQPOICTIDVYMWVKW 948
 QY 960 MIDSECRPRELVSFERSMARDPQRFVVIQNEDELGPA---SPLDSTFYRSLLDDMDGD 1016
 Db 949 MIDENIRPTEKELANEFTRMARDPPRYLVIKRES-GFGIAPGPEPHGLTKWKEVELEP 1007
 QY 1017 LVDAAEVLVPQGFPCFPAPGAGGVHHRSSSTSGGGDLTLGLEP-SEEEAPRSL 1075
 Db 1008 ELDLDDLEABED-----NLATTTIGSALSPLVGTINRPRGQSLL 1048
 QY 1076 APSEGAGSDVFDGLGMAAGKGLQLPTHDPSPFLQRYSEDPTVPLP-----SETDGYV 1128
 Db 1049 SPSSGY-MPMNQNLGSCOEASVSGSERCPVSLH-----PMPRGCLASESGHV 1101
 QY 1129 A-----PLTCSPOPE-----YVNPQDVRPQPPSPREGP-----L 1157
 Db 1102 TGSEAEIQKVSRCRSRSRSPRGDSAYHSQRHSLTTPVTPLSPPGLEEDVNGYVM 1161
 QY 1158 PAARPAGATLERAKTISP-GKNQV-----KDVFAFGAVENPEYLTPOGGNAPOPHDP 1210
 Db 1162 PDTHLKGTPSSREGTLLSVGLSGTVEEDED-----EYENYNNRRRHSP-PHPP 1212
 QY 1211 PAFSPAFDNLVYWD-----QDPPERGAPPSTFKGTPTAENPEYL 1249
 Db 1213 RPSLSLEELGYEYMDVGSDDLASLGSTQSCPLHPVPIMPAGITPDEDEYEM 1263

RESULT 10
 JC4387
 N;epidermal growth factor receptor homolog precursor - rat
 C;Species: Rattus norvegicus (Norway rat)
 C;Date: 17-Jan-1996 #sequence_revision 19-Apr-1996 #text_change 16-Aug-2004
 C;Accession: JC4387
 R;Hellyer, N.J.; Kim, H.H.; Greaves, C.H.; Sierke, S.L.; Koland, J.G.
 Gene 165, 279-284, 1995
 A;Title: Cloning of the rat ErbB3 cDNA and characterization of the recombinant protein.
 A;Reference number: JC4387; MUID:96096535; PMID:8522190
 A;Accession: JC4387
 A;Molecule type: mRNA
 A;Residues: 1-1339 <HEL>

A;Cross-references: GB:U29339; NID:g915389; PID:g915390
 A;Experimental source: liver
 A;Note: The authors translated the codon AAC for residue 369 as Thr and GTT for residue
 C;Comment: this protein is a functional heregulin receptor that transduces signals to c.
 C;Genetics:
 A;Gene: ErbB3
 C;Superfamily: protein kinase homology
 C;Keywords: ATP; growth factor receptor; liver; phosphoprotein; transmembrane protein
 F;1-19/Domain: signal sequence #status predicted <SIG>
 F;20-1339/Product: epidermal growth factor homolog #status predicted <MAT>
 F;640-659/Domain: transmembrane #status predicted <TMM>
 F;705-970/Domain: protein kinase homology <KIN>
 F;713-721/Region: protein kinase ATP-binding motif
 F;939,1051,1156,1194,1196,1219,1257,1259,1273,1286,1325/Binding site: phosphate (TYR)
 Query Match 34.4%; Score 2346.5; DB 2; Length 1339;
 Best Local Similarity 40.8%; Pred. No. 2.3e-90;
 Matches 523; Conservative 171; Mismatches 434; Indels 155; Gaps 34;

QY 3 LAALCRWGLLLALLPPGAA---STOVCTGTOMKRLRSPASPETHLDMLRHLXGCVVOG 59
 Db 7 LQVLC-----FLLSLARGSEMGNSSQAVCPGTNLGLSVTGDADNQYQTLKLYKECEVVMGN 62
 QY 60 LELTYLPTNASLSFLQDIOEVQVYVLIAHNQVRQVPLQRLRIVRGTRQTLFEDNYALAVLDN 119
 Db 63 LEIVLTGHNADLSFLQWIREVTAYVLVAMNEFSLPLNLRVVRGTQVVDGKFAIFVM-- 120
 QY 120 GDPLANNTPVTGASPGGLRELQRLSLTEILKGGVLIQRNPOLCYOQDTILWKDIFHKNQOL 179
 Db 121 ---LNYNT---NSSHALRQLKFTQLTEILSGVYIEKNDKLCHMDTDWRDIVRVR--- 170
 QY 180 ALTLDTNRSRACHPCSPMKGSRGWGESSEDCQSILRTVCAGGC-ARCKGLPLPTDCHE 238
 Db 171 GAIEVVKANGANCPPEVCKG-RWGGPDDCQLTKTIIICAPQNGRCFGNPNQCCHD 229
 QY 239 QCAAGCTGPKHSDCLACLHFNHSG:CELCPCALVATYNTDTFESMPNPEGRYTFGASCVTA 298
 Db 230 ECAGCGSGPQDTCFACRRFNDSGACVPRCPPLVYKLTFOLEPNPHTKYQYGVGVCVAS 289
 QY 299 CPYNYLSTDVSGCTIVCLPHNQEVTAEDGTQRCCKSPCARVCYGLGHEHLREVRVTS 358
 Db 290 CPNHFV-VQTFECVRACPPDKMEVD-KHGLKMCCEPGCLCPKACGCTGSG--SRVQTVD 345
 QY 359 ANIQFAGCKIFGSLAFIPESFDGDPASNTAPLOEQLOVPELLEEITGYLYISAWPDS 418
 Db 346 SNIDFVNCTKILGNLDFITGLNVDPWHKIIPALDPEKLVNFTVREITGYLNIQSWPH 405
 QY 419 LPDLSVFNQLQVIRGRIHNGAYS-LTLQGLGISWGLRSLRELGSGLALIHHTHLCPV 477
 Db 406 MHNFSVFNLTITIGRSLYNRGFSLLIMKNLNVTSIGFRSLKEISAGRVYISANQQLCYH 465
 QY 478 HTVPWDQLFRNPHQALLHTA-NRDEDECVEGLACHOLCARGCHWGPGTQVCNCSQFLR 536
 Db 466 HSLNWTLLRGPSEBRLDIKYDRPLGECLAEKVKDPLCSCGGCGWPAFGQCLSCRNSR 525
 QY 537 GQECVEECRVLOGLPREYVVARHCLPCHPEQOPQNGSVTCFPGPEADOCVACHYKDPFPC 596
 Db 526 EGVCTHCHNLFQEBEPREFVHEAQCFSCHPECLPMEGTSTYNGSGSDACARCAHFRDPHC 585
 QY 597 VARCPGSGVKPDLSYMPIWKFPDEEGACQPCPINCHTSC--VLDLDDKGPAAQRASPLTSI 654
 Db 586 VNSCPHGILG--AKGPIYKYPDQAEQNECRPCHECTQCGNGPELQCLGQAEVLMSPHLV 643
 QY 655 VSAVGVILLVVLGVVFGILLIKRQOKIP-KYMERLLOETELVEPLTPSGAMPNQAQMR 713
 Db 644 IAVTVG--LAVTILMILGGSFLYWRGRRIONKRAMRYLERGESIEPLDPS-EKANKVLAR 700
 QY 714 ILKETELRKVKVLSGAGFVYKGIWIPDGENVKIPVAIKVLRENTSPKANKEILDEAYV 773
 Db 701 IFKETELRLKVLGSGVFGTVHKGWIPGESIKIPVCIKVIEDKSGRQSFQAVTDHMLA 760
 QY 774 MAGVGSPPYVSRLLGICLTSTVQLTQMLPYGCLLDHVRNRRGLSGODLLNMCQIAKMS 833

Db 761 VGLDHAHIVALLGLCPSSQLVTVQLPLGLSLDHVKQHRETLGPQLLLNWGVQIAKGM 820
Qy 834 SYLEDVRLVHRDLAARNVLKSPNHNKITTDFGLARLLDIDETEHADGKGVPIKMALES 893
Db 821 YLBEHKNVHRDLALRNVLKSPQVQVADPGVADLPPDKQLLHSEAKTPIKMALES 880
Qy 894 ILRRRFTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPPOPICTIDVYM 953
Db 881 IHFGKXTHQSDVMSYGVTVWELMTFGAEPYAGRLAELPDLEKGERLAQPOICTIDVYM 940
Qy 954 IMVKWIDSECRPRFELVSEFRMARDPQRFVVIQNEIDGLPASPLDSTFYRSLLEDDDD 1013
Db 941 VMVKWIDENIRPTFKELANETFRMARDPPRYLVIKRAS-GPGCT--PAAEPSVLTKKE 997
Qy 1014 MGLDVAEYLVPOQGFPCPDPAFGAGGMVHRRSSSTRSGGDLTLGLEPSE----- 1068
Db 998 L-----QEALELEP-----DLDLDEAELEGATS 1023
Qy 1069 -----EAPRSLAPSEG-----AGSDVFDGLGMAAKGLQSLPTH 1105
Db 1024 LGSALSPTGTLTRPGSQSLSPSSGYMPMNQSSLGEACLDASVLGREGFSRPSILH- 1082
Qy 1106 PSPQRVSEDTVLPSETDGV-----APL-----TC-----SPOPE-----YVNPQDV 1145
Db 1083 PIPGR-----PASESEGHVTGSEAELOEKVSVCRSRSPRPRGDSAYHSQRHS 1135
Qy 1146 RPQPPSPREGP-----LPAARPAGATLERAKTLSP-GKNGVV-----KOVFAF 1187
Db 1136 LLTPVTLSPPLGEEONGVMPDTHLRGASSREGTLSSVGLUSSVLGTEEDD----- 1191
Qy 1188 GGAVENPEYLTPOQGAAPQPHPP 1210
Db 1192 -----EEYEVNMRKRGSP-PRPP 1209

RESULT 11

TVFVLV

protein-tyrosine kinase (EC 2.7.1.112) erbB - avian leukosis virus
N;Contains: amino end of gag protein; env protein fragment; protein-tyrosine kinase
C;Species: avian-leukosis virus, ALV
C;Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 09-Jul-2004
C;Accession: A00643
R;Nilsen, T.W.; Maroney, P.A.; Goodwin, R.G.; Rottman, F.M.; Crittenden, L.B.; Raines, M
Cell 41, 719-726, 1985
A;Title: C-erbB activation in ALV-induced erythroblastosis: novel RNA processing and pro
A;Reference number: A00643; MUID:85228222; PMID:2988784
A;Accession: B00643
A;Molecule type: mRNA
A;Residues: 1-698 <NIL>
A;Cross-references: UNIPROT:P00534; GB:M10066; GB:M13981; NID:g211749; PIDN:AAA48763.1;
A;Note: in Genbank entry CHKERBBF, release 109.0, the source is designated as Gallus gal
C;Comment: This protein is synthesized as a gag-env-erbB protein.
C;Genetics:
A;Gene: gag-env-erbB
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific P
F;1-6/Product: gag protein (fragment) #status predicted <GAG>
F;7-59/Product: env protein (fragment) #status predicted <ENV>
F;60-698/Product: protein-tyrosine kinase erbB #status predicted <ERB>
F;194-459/Domain: protein kinase homology <KIN>
F;202-210/Region: protein kinase ATP-binding motif
F;229/Active site: Lys #status predicted

Query Match 25.9%; Score 1766.5; DB 1; Length 698;
Best Local Similarity 52.2%; Pred. No. 1.5e-66;
Matches 374; Conservative 80; Mismatches 137; Indels 125; Gaps 18;

Qy 578 GPEADQCVACAHYDPFCVACRSPGVKPDLSYMPIWKFPEEGACQPCINCHSCVDL 637
Db 60 GP--DHCMKCAHFDGPHCVKACPAVLGENDTL-VWKYADANAVCOLCHPCNCRGCKGP 116
Qy 638 DDKCPAEQARSPLTSTVSAVV-GILLVVLGVVFGILIKRQOKIRKTYMRLQLQTEL 696

Db 117 GLBGP-----NGSKTPSIAAGVVGGLCLLVVVGILGILYLRRL-HIVKRTLRLLQLBREL 172
Qy 697 VEPLTSGAMPNOAQWEILKETELRKVKVLGSGAGFYVYKIGITPDGENKIPVAKVLR 756
Db 173 VEPLTSGEAPNOAHLRIKETETFKVKVVLGSGAGFYVYKIGITPDGENKIPVAKVLR 232
Qy 757 ENTSPKANKELDEAYVMAGVGSPPYVSRLLGICLTSTVQLVLTQIMPYGCLLDHVRNRR 816
Db 233 EATSPKANKELDEAYVMASVDNPHVCRLLGICLTSTVQLITQLMPYGCLLDYIREHKN 292
Qy 817 LGSQDLNLCWQIAKMSYLEDVRLVHRDLAARNVLKSPNHNKITTDFGLARLLDIDETE 876
Db 293 IGSQYLLNWCQIAKGMNYLEERRLVHRDLAARNVLKTPQHVKITDFGLAKLGADEKE 352
Qy 877 YHAGGGKVPILKMALESILRRRTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLE 936
Db 353 YHAGGGKVPILKMALESILHRIYTHQSDVMSYGVTVWELMTFGSKPYDGIIPASEISVLE 412
Qy 937 KGERLPPOPICTIDVYIMVKWIDSECRPRFELVSEFRMARDPQRFVVIQ-NEDLIG 995
Db 413 KGERLPPOPICTIDVYIMVKWIDADSRPKRELLAEFSKWARDPPRYLVIQDERMH 472
Qy 996 PASPLDSTFYRSLLEDDMDGLVDAEYLVPOQGFPCPDPAFGAGGMVHRRSSSTRSG 1055
Db 473 LPSPTDSKFYRTLMEEDMEDIVDAEYLVPHQGF-----NSPST--- 513
Qy 1056 GGLTLGLEPSESEAPRSP-----APSEGAGSDVFDGLGMAAKGLQSLPTHDPSPLO 1110
Db 514 -----SRTPLLSLSATSNNSATNCID-----RNGQHPVREDSFVQ 550
Qy 1111 RYSEDTPTVLPSET--DGYVAPLTCSPQPEYVNPQDVVRPQPPSPREGPLPAARAGATLE 1168
Db 551 RYSDPTGTFLESIDGFL-----PAPEYVQV--LMPKKPS----- 585
Qy 1169 RAKTLSPGKNGVVKDVP-----AFGGAVENPEYLTPOQGAAPQPHPPAF 1213
Db 586 -----TAMVQNIYNNISLTAISKLPMSRYQNSHSTAVDNPEYL-----NTNQSPLA 633
Qy 1214 SPADFNLVYWDQ-----DPEE-----RGAPPSTFGKTPTAENPEYILGDDVP 1254
Db 634 KTVFESSPYIQSGNHQINLDNPDYQQDFLPNETKPNGLLKVAAENPEYLRVAAP 689

RESULT 12

TVYUHV

protein-tyrosine kinase (EC 2.7.1.112) erbB - avian erythroblastosis virus (strain H)
C;Species: avian erythroblastosis virus
C;Date: 18-Apr-1984 #sequence_revision 18-Apr-1984 #text_change 09-Jul-2004
C;Accession: A00644; A38022
R;Yamamoto, T.; Nishida, T.; Miyajima, N.; Kawai, S.; Ooi, T.; Toyoshima, K.
Cell 35, 71-78, 1983
A;Title: The erbB gene of avian erythroblastosis virus is a member of the src gene fami
A;Reference number: A00644; MUID:84026539; PMID:6313229
A;Accession: A00644
A;Molecule type: DNA
A;Residues: 1-604 <YAM>
A;Cross-references: UNIPROT:P00535; GB:K01216; NID:g209676; PIDN:AAA42400.1; PID:g20967
R;Deboure, B.; Henry, C.; Benaisa, M.; Biserte, G.; Claverie, J.M.; Saule, S.; Martin,
Science 224, 1456-1459, 1984
A;Title: Sequencing the erba gene of avian erythroblastosis virus reveals a new type of
A;Reference number: A38022; MUID:84223957; PMID:6328658
A;Accession: A38022
A;Molecule type: DNA
A;Residues: 1-28,'W',30-139,'F',141-145,'V',147-152 <DEB>
A;Cross-references: GB:K02006
C;Genetics:
A;Gene: erbB
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific
F;130-395/Domain: protein kinase homology <KIN>
F;138-146/Region: protein kinase ATP-binding motif
F;165/Active site: Lys #status predicted

Db 715 QYTAIGPY-----CRASPPRSKITANLD-----VNIIFIITGAVLVPTIC 755
QY 669 VFGI-LIKRROOKIRYV--MRLLQETELVPLTPSGAMPNOAOWRILKTELKRVKV 725
Db 756 ILCVYIYICQKAKAKETVMWALSGRDESPRLPSNTGANLCKRIRIVDAELRGGV 815
QY 726 LGSAGFTVYKGIWIPDGENVKIPVAIKVLRNTSPKANKEILDEAYVMAGVSPVYSL 785
Db 816 LGMGAFGRVYKGVVPEGENVKIPVAIKELKSTGAESSEFLREAYIMASEBHVNLKL 875
QY 786 LGICLSTVQLVTLMPYGCILDHVRENRLGSLQDILLNMCQIAKMSYLEVDRLVHRD 845
Db 876 LAVCMSSQMLITQLMPLGLCLDYVRNRDKIGSKALLNWSQIAKMSYLEKRLVHRD 935
QY 846 LAARNVLVK--SPNHVKITDFGLARLLDDEYHADGKVPDKMALESILRRRTHQ 902
Db 936 LAARNVLRLUGEDH----DFGLAKLLSSDSNEYKAAGGMPIKMALECIINRVFTSK 991
QY 903 SDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLEKGERLPQPTICTIDVYMIWVKWMD 962
Db 992 SDVWAFGVTIWEILLTFQREHNIIPAKDIPDLLEVGLKLPQICSLDIYCTLLSCHLD 1051
QY 963 SECRPRPRELVSEFSRMARDPQRFVQIONEDLG--PASPLDSTFYRSLLEDD--DWGDL 1017
Db 1052 AAMRPTFKQLTVFAEPARDFGRYLAIGDKFTRLPA-----YTSQDEKOLIRKLAPT 1104
QY 1018 VDAEYLVPQGFPCPPAPGAGGVHHRSSSTRSGGDLTLGLEPSEEAR-----1071
Db 1105 TDGSEAIATPDYLOPKAALGPS-----HRTDCT-----DEMPKLNRYC 1143
QY 1072 RSLAPSEAGAGSDVFDG---DLGMAAKGLQLSLTPHDPQLQRYSEDPTVPLPSETDGYV 1128
Db 1144 KPSNKNSSGDDERDSAREVGUNLR-----LDLPVDEDDYL 1182
QY 1129 APITCSPQRYVNPQVROPQPPREGPLPAAPAGATLRAKTLSPGKNGVVKDVFAFG 1188
Db 1183 MP-TCQPGPNNNMN-----NPNQNNMAAVGAAGYM-----DLIGVP 1220
QY 1189 GAVENPEYL---TPOGAAPQPH-----PPAPFSP-AFONLYIWD 1224
Db 1221 VSDNPEYLLNAQTLGVGSEPIPTQTIGIPVWGSGPTMEVKVPMPSGSEPTSSDHEYND 1279

RESULT 14

S35745

protein-tyrosine kinase (EC 2.7.1.112) erbB - avian erythroblastosis virus
C;Species: avian erythroblastosis virus

C;Date: 03-Mar-1994 #sequence_revision 26-May-1995 #text_change 09-Jul-2004

C;Accession: S35745

R;Vennstrom, B.
submitted to the EMBL Data Library, March 1993

A;Reference number: S35743

A;Accession: S35745

A;Molecule type: DNA

A;Residues: 1-544 <VEN>

A;Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X12707

C;Genetics:

A;Gene: erbB

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; oncogene; phosphotransferase; transforming protein; tyrosine-specific p

F;135-400/Domain: protein kinase homology <KIN>

F;143-151/Region: protein kinase ATP-binding motif

F;170/Active site: Lys #status predicted

Query Match 24.2%; Score 1647; DB 2; Length 544;

Best Local Similarity 54.9%; Pred. No. 1.1e-61;

Matches 345; Conservative 70; Mismatches 121; Indels 92; Gaps 15;

QY 578 GPEADQCVACAHYKDPFPCVACPSGVKPDLSYMPIWKFDEGACQPCINCHSCVDL 637

Db 1 GP--DHCMKCAHFIDGPHCVKACPAVLGENDTL-VWKYADANAVCQLCHPNCCTRGCKGP 57

QY 638 DKGCPAEQASPLTSIVSAV--GILLVVVLGVVFGILIKRROOKIRKYTMRLLOTEL 696
Db 58 GLEGCP-----NGSKTPSIAAGVVGGLCLVAVVGLIGLYLRR--HIVKRTLRLQLREL 113
QY 697 VEPLTSGAMPNOAOWRILKTELKRVKVLGSGAFGVYKGIWIPDGENVKIPVAIKVR 756
Db 114 VEPLTSGEAPNOAHRIILKETEFKKVKVLGFGAFGVYKGLWIPGEKVTIIPVAIKELR 173
QY 757 ENTSKANKEILDEAYVMAGVSPVYRLLIGLICLTSTVQLVTLQMPYGCILDHVRENRR 816
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLIGLICLTSTVQLITQIMPYGCILDIYREKDN 233
QY 817 LGSQDILLNMCQIAKMSYLEVDRLVHRDLAARNVLVSPNHVKITDFGLARLLDDETE 876
Db 234 IGSQYLLNWCQIAKMSYLEERHVMVRDLAARNVLVKTPOHKVITDFGLAKQLGADEKE 293
QY 877 YHADGKVPDKMALESILRRRTHQSDVMSYGVTVWELMTFGAKPYDGIIPAREIPDLLE 936
Db 294 YHAEGGKVPDKMALESILHRIYTHQSDVMSYGVTVWELMTFGSKPYDGIIPASEISSVLE 353
QY 937 KGERLPQPTICTIDVYMIWVKWMDSECRPRELVSEFSRMARDPQRFVQI--NEDLG 995
Db 354 KGERLPQPTICTIDVYMIWVKWMSDASRPRELIAEFSKWARDPRLVLIQGDERRH 413
QY 996 PASPLDSTFYRSLLEDDMGDLVDAEYLVPQGFPCPPAPGAGGVHHRSSSTRSG 1055
Db 414 LPSPTDSKFVTLMESEDMEDIVDAEYLVPHQGF-----NSPST---454
QY 1056 GGDLTGLPSEEARPSPL-----APSEGAGSDVFDGDLGMAAKGLQLSLTPHDPSPQLQ 1110
Db 455 -----SRTPLLSLSATSNATNCIDRNGG-----H-----481
QY 1111 RYSEDPVTVLPSETDGVVAPLTCSPQRYVNPQVROPQPPREGPLPAAPAGAT--LER 1169
Db 482 -----PVREDGFL-----PAPEYVQ--LMPKPESTAMVQNIYVYISLTAISK 523
QY 1170 AKTLPSPGKNGVVKDVFAFGGAVENPEYL 1197
Db 524 LPIDSRVQN-----SHSTAVDNPEYL 544

RESULT 15

S00727

kinase-related transforming protein (erbB) (EC 2.7.1.1-) - avian erythroblastosis virus
C;Species: avian erythroblastosis virus

C;Date: 01-Dec-1989 #sequence_revision 01-Dec-1989 #text_change 09-Jul-2004

C;Accession: S00727

R;Scotting, P.; Vennstrom, B.; Jansen, M.; Graf, T.; Beug, H.; Hayman, M.J.

Oncogene Res. 1, 265-278, 1987

A;Title: Common site of mutation in the erbB gene of avian erythroblastosis virus mutan

A;Reference number: S00727; MUID:88217326; PMID:2897102

A;Accession: S00727

A;Molecule type: DNA

A;Residues: 1-545 <SCO>

A;Cross-references: UNIPROT:Q85468; UNIPROT:Q64895; EMBL:X06943

C;Genetics:

A;Gene: erbB

C;Superfamily: epidermal growth factor receptor; protein kinase homology

C;Keywords: ATP; phosphotransferase

F;135-400/Domain: protein kinase homology <KIN>

F;143-151/Region: protein kinase ATP-binding motif

Query Match 24.1%; Score 1640; DB 2; Length 545;

Best Local Similarity 54.9%; Pred. No. 2.1e-61;

Matches 345; Conservative 69; Mismatches 122; Indels 92; Gaps 15;

QY 578 GPEADQCVACAHYKDPFPCVACPSGVKPDLSYMPIWKFDEGACQPCINCHSCVDL 637

Db 1 GP--DHCMKCAHFIDGPHCVKACPAVLGENDTL-VWKYADANAVCQLCHPNCCTRGCKGP 57

QY 638 DKGCPAEQASPLTSIVSAV--GILLVVVLGVVFGILIKRROOKIRKYTMRLLOTEL 696

Db 58 GLEGCP-----NGSKTPSIAAGVVGGLCLVAVVGLIGLYLRR--HIVKRTLRLQLREL 113

QY 697 VBLTSGAMPNQAOMREILKETELRKVKVLGSGAFGVYKGIWIPGENVKIPVAIKVL 756 -
Db 114 VBLTSGGAPNQAHLRIILKETEFKKVKVLGFGAFGVYKGLWIPEGEKVTIPVAIKEL 173
QY 757 ENTSPKANKEILDEAYVMAGVSGSPYVSRLLIGICTSTVOLVTOLMPYGCLLDHHVRENCR 816
Db 174 EATSPKANKEILDEAYVMASVDNPHVCRLLIGICTSTVQLITOLMPYGCLLDYIREHKN 233
QY 817 LGSQDLLNMCQIAKMSYLEVDRLVHRDLAARNVLKSPNHVKITDFGLARLLDIDETE 876
Db 234 IGSQYLLNVCQIAKGMNLEERHLVHRDLAARNVLKTPQDVKITDFGLAKQLGADEKE 293
QY 877 YHADGGKVPKWMALESIILRRRTHOSDVSYSYVTVWELMTGCAKDYDGIPIAREIPDLE 936
Db 294 YHAEKGKVPKWMALESIILHRIYTHOSDVSYSYVTVWELMTGSKPYDGIPIASEISSVLE 353
QY 937 KGERLPQPPICITDVYMIWVKCMIDSECRPRPRELVSEFSRMARDPQRFVVIQ-NEDLG 995
Db 354 KGERLPQPPICITDVYMIWVKCMWDSDSPKPERELIAEFKWARDPPRYLVIQDERMH 413
QY 996 PASPLDSTYRSLLEDDMGDLVDAEYLVPOQGFPCDPAPGAGGMVHHRSSSTRSG 1055
Db 414 LPSPTDSKFYRILMEEDMEDI VDADEYLVPHQGF-----NSPST--- 454
QY 1056 GGDLTGLPSEEEAPRSPJ-----APSEGAGSDVFDGLGMGAAGLQSLPTHDPSP 1110
Db 455 -----SRTPLLSLSATSNNSATNCIDRNG-----H----- 481
QY 1111 RYSEDPTVLPSETDGYVAPLTCSPQPEYVNOPDVVRPQPPSPREGPLPAARPAGAT-LER 1169
Db 482 -----PVREDGFL-----PAPEYVNO--LMPKKPSTAMVQNIYNYISLTAISK 523
QY 1170 AKTLPCKNGVVKDVFAFGAVENPEYL 1197
Db 524 LPMDSRYQN-----SHSTAVDNPEYL 544

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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:09 / Search time 12.9167 Seconds
(without alignments)
111.736 Million cell updates/sec

Title: US-09-806-703A-12

Perfect score: 74

Sequence: 1 QYIKANSKFIGITEL 15

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_79:*

1: pir1:*

2: pir2:*

3: pir3:*

4: pir4:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	74	100.0	1315	1 BTCLTN	tentoxilysin (EC 3
2	44.5	60.1	244	2 S29982	class II histocomp
3	44	59.5	66	2 S31029	gene 84 protein -
4	43	58.1	180	2 G86826	diamine N-acetyltr
5	43	58.1	899	2 T42976	hypothetical prote
6	42.5	57.4	1060	2 S06286	major merozoite su
7	42.5	57.4	1086	2 S16752	major merozoite su
8	42.5	57.4	1701	2 A26868	major merozoite su
9	42.5	57.4	1701	2 A54498	major merozoite su
10	42.5	57.4	1726	1 SAZQDM	major merozoite su
11	42.5	57.4	1726	2 A45948	major merozoite su
12	42	56.8	1333	2 S38635	blastoplia polyprot
13	41	55.4	123	2 G48677	Ig heavy chain V-D
14	41	55.4	447	2 H97146	siderophore/Surfac
15	41	55.4	899	2 G36812	hypothetical prote
16	40.5	54.7	245	2 S29980	class II histocomp
17	40	54.1	79	2 D85794	hypothetical prote
18	40	54.1	194	2 G64026	(acyl-carrier-prot
19	40	54.1	601	1 A55485	oligopeptidase (EC
20	40	54.1	601	2 G86840	oligoendopeptidase
21	40	54.1	644	2 S46746	hypothetical prote
22	39	52.7	102	2 PH1491	Ig heavy chain V r
23	39	52.7	119	2 PH1518	Ig heavy chain V r
24	39	52.7	119	2 PH1516	Ig heavy chain V r
25	39	52.7	119	2 PH1519	Ig heavy chain V r
26	39	52.7	123	2 F48677	Ig heavy chain V-D
27	39	52.7	135	2 PH1494	Ig heavy chain V r
28	39	52.7	140	2 PH1488	Ig heavy chain V r
29	39	52.7	189	2 G97978	conserved hypothet

30	39	52.7	213	1 KIYMC	adenylate kinase (
31	39	52.7	326	2 B71808	type II restrictio
32	39	52.7	349	2 T43043	probable acetyl-Co
33	39	52.7	423	2 F64690	type IIS restricti
34	39	52.7	505	2 C90569	hypothetical prote
35	38	51.4	188	2 A64639	hypothetical prote
36	38	51.4	188	2 H71875	hypothetical prote
37	38	51.4	256	2 F64472	hypothetical prote
38	38	51.4	287	2 F70361	tRNA-pseudouridine
39	38	51.4	381	2 F70361	probable hexosyltr
40	38	51.4	383	2 T51466	hypothetical prote
41	38	51.4	424	2 T29127	hypothetical prote
42	38	51.4	501	2 T52135	cellulase (EC 3.2.
43	38	51.4	501	2 A86158	endo-1,4-beta gluc
44	38	51.4	561	2 E82395	methyl-accepting c
45	38	51.4	572	1 HNN280	hemagglutinin-neur

ALIGNMENTS

RESULT 1

BTCLTN

tentoxilysin (EC 3.4.24.68) precursor - Clostridium tetani

N;Alternate names: tetanus neurotoxin

C;Species: Clostridium tetani

C;Date: 31-Mar-1988 #sequence revision 31-Mar-1988 #text change 09-Jul-2004

C;Accession: A25689; A25757; A25194; B25194; A60759; S69348; S09364

R;Eisel, U.; Jarausch, W.; Goretzki, K.; Henschen, A.; Engels, J.; Weller, U.; Hudel, M.

EMBO J. 5, 2495-2502, 1986

A;Title: Tetanus toxin: primary structure, expression in E. coli, and homology with bot

A;Reference number: A25689; MUID:87053814; PMID:3536478

A;Accession: A25689

A;Molecule type: DNA

A;Residues: 1-1315 <EIS>

A;Cross-references: UNIPROT:P04958; GB:X04436; NID:G40769; PIDN:CAA28033.1; PID:G40770

R;Fairweather, N.F.; Lyness, V.A.

Nucleic Acids Res. 14, 7809-7812, 1986

A;Title: The complete nucleotide sequence of tetanus toxin.

A;Reference number: A25757; MUID:87040747; PMID:3774547

A;Accession: A25757

A;Molecule type: DNA

A;Residues: 1-1315 <PAI>

A;Cross-references: GB:X06214; NID:G40773; PIDN:CAA29564.1; PID:G40774

A;Experimental source: strain CN3911

R;Fairweather, N.F.; Lyness, V.A.; Pickard, D.J.; Allen, G.; Thomson, R.O.

J. Bacteriol. 165, 21-27, 1986

A;Title: Cloning, nucleotide sequencing, and expression of tetanus toxin fragment C in

A;Reference number: A25194; MUID:86085672; PMID:3510187

A;Accession: A25194

A;Molecule type: DNA

A;Residues: 743-1315 <PA2>

A;Cross-references: GB:M12739; NID:G144920; PIDN:AAA23282.1; PID:G144921

A;Accession: B25194

A;Molecule type: protein

A;Residues: 865-894 <PA3>

R;Matsuda, M.; Lei, D.L.; Sugimoto, N.; Ozutsu, K.; Okabe, T.

Infect. Immun. 57, 3588-3593, 1989

A;Title: Isolation, purification, and characterization of fragment B, the NH-2-terminal

A;Reference number: A60759; MUID:90035436; PMID:2478476

A;Accession: A60759

A;Molecule type: protein

A;Residues: 461-475 <MAT>

R;Demotz, S.; Lanzavecchia, L.; Eisel, U.; Niemann, H.; Widmann, C.; Corradin, G.

J. Immunol. 142, 394-403, 1989

A;Title: Delineation of several DR-restricted tetanus toxin T cell epitopes.

A;Reference number: JS0098; MUID:8903918; PMID:2463305

A;Contents: annotation; epitope region

R;Schiano, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B

Nature 359, 832-835, 1992

A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteoly

A;Reference number: S27125; MUID:93063293; PMID:1311807

A;Contents: annotation

RESULT 6

F;20-1701/Product: major merozoite surface antigen #status predicted <MAT>

Query Match 57.4%; Score 42.5; DB 2; Length 1701;
Best Local Similarity 60.0%; Pred. No. 31;
Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;

OY 1 QYIKANSKFI-GITE 14
|:::||||| |::||
1001 QFVKNSKVITGLTE 1015

RESULT 9
A54498
Major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (ist)
C;Species: Plasmodium falciparum
C;Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 09-Jul-2004
C;Accession: A54498
R;Peterson, M.G.; Coppel, R.L.; McIntyre, P.; Langford, C.J.; Woodrow, G.; Brown, G.V.;
Mol. Biochem. Parasitol. 27, 291-302, 1988
A;Title: Variation in the precursor to the major merozoite surface antigens of Plasmodium
falciparum
A;Reference number: A54498; MUID:88142999; PMID:2449612
A;Accession: A54498
A>Status: preliminary
A:Molecule type: DNA
A;Residues: 1-1701 <PEP>
A;Cross-references: UNIPROT:P13819; GB:M19143; NID:g160412; PIDN:AAA23653.1; PID:g160412
C;Superfamily: major merozoite surface antigen
C;Keywords: surface antigen

Query Match 57.4%; Score 42.5; DB 2; Length 1701;
Best Local Similarity 60.0%; Pred. No. 31;
Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;

OY 1 QYIKANSKFI-GITE 14
|:::||||| |::||
1001 QFVKNSKVITGLTE 1015

RESULT 10
SAZQCM
Major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (st)
N;Alternate names: 19SK glycoprotein
C;Species: Plasmodium falciparum
C;Date: 30-Sep-1987 #sequence_revision 31-Mar-1991 #text_change 09-Jul-2004
C;Accession: A23386; S06361
R;Weber, J.L.; Leininger, W.M.; Lyon, J.A.
Nucleic Acids Res. 14, 3311-3323, 1986
A;Title: Variation in the gene encoding a major merozoite surface antigen of the human
malaria parasite
A;Reference number: A23386; MUID:86205236; PMID:3517809
A;Accession: A23386
A:Molecule type: DNA
A;Residues: 1-1104 <WEB1>
A;Cross-references: UNIPROT:P04934; EMBL:X03831
R;Weber, J.L.; Sim, B.K.L.; Lyon, J.A.; Wolff, R.
Nucleic Acids Res. 16, 1206, 1988
A;Title: Merozoite surface protein sequence from the Camp strain of the human malaria parasite
A;Reference number: S06361; MUID:88143999; PMID:3278296
A;Accession: S06361
A:Molecule type: DNA
A;Residues: 1104-1726 <WEB2>
A;Cross-references: EMBL:X03831
C;Comment: The merozoite stages of different strains have strain-specific surface antigen
repeats
C;Superfamily: major merozoite surface antigen
C;Keywords: glycoprotein; merozoite; surface antigen; tandem repeat
F;1-19/Domain: signal sequence #status predicted <SIG>
F;20-1726/Product: major merozoite surface antigen #status predicted <MAT>
F;67-87,91-96,100-105,109-120/Region: 3-residue repeats (S-G-T)
F;757-765/Region: 3-residue repeats (T-E-E)
F;133,272,501,567,638,827,939,924,944,990,1016,1114,1221,1613,1658/Binding site: carbohy

Query Match 57.4%; Score 42.5; DB 1; Length 1726;
Best Local Similarity 60.0%; Pred. No. 32;

Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;
QY 1 QYIKANSKFI-GITE 14
Db 1026 QFVKNSKIVITGLTE 1040

RESULT 11
A45948
major merozoite surface antigen precursor - malaria parasite (Plasmodium falciparum) (st
C:Species: Plasmodium falciparum
C>Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 09-Jul-2004
C:Accession: A45948
R;Chang, S.P.; Kramer, K.J.; Yamaga, K.M.; Kato, A.; Case, S.E.; Siddiqui, W.A.
Exp. Parasitol. 67, 1-11, 1988
A>Title: Plasmodium falciparum: gene structure and hydropathy profile of the major merozo
A:Reference number: A45948; MUID:89005525; PMID:3049134
A:Accession: A45948
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-1726 <CHA>
A:Cross-references: UNIPROT:Q25922; GB:M37213
C:Superfamily: major merozoite surface antigen
C:Keywords: surface antigen

Query Match. 57.4%; Score 42.5; DB 2; Length 1726;
Best Local Similarity 60.0%; Pred. No. 32;
Matches 9; Conservative 4; Mismatches 1; Indels 1; Gaps 1;
QY 1 QYIKANSKFI-GITE 14
Db 1026 QFVKNSKIVITGLTE 1040

RESULT 12
S38635
blastopia polyprotein - fruit fly (Drosophila melanogaster)
C:Species: Drosophila melanogaster
C>Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C:Accession: S38635
R;Frommer, G.; Schuh, R.; Jöckle, H.
submitted to the EMBL Data Library, November 1993
A:Description: Localized expression of a novel microplasia-like element in the blastoderm o
A:Reference number: S38635
A:Accession: S38635
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-1333 <FRO>
A:Cross-references: UNIPROT:Q24262; EMBL:Z27119; NID:9415797; PID:9415798
C:Genetics:
A:Gene: FlyBase:micropia
A:Cross-references: FlyBase:FBgn0014947
C:Keywords: polyprotein

Query Match 56.8%; Score 42; DB 2; Length 1333;
Best Local Similarity 53.3%; Pred. No. 30;
Matches 8; Conservative 3; Mismatches 4; Indels 0; Gaps 0;
QY 1 QYIKANSKFI-GITE 15
Db 127 KYVQARSKMIGSAEL 141

RESULT 13
G48677
Ig heavy chain V-D-J region (419.1) - mouse (fragment)
C:Species: Mus musculus (house mouse)
C>Date: 19-May-1994 #sequence_revision 19-May-1994 #text_change 17-Mar-1999
C:Accession: G48677
R;Tasignon, J.; Brait, M.; Jamila, I.; Urbain, J.; Gottlieb, P.; Brown, A.; Hasemann, C
Proc. Natl. Acad. Sci. U.S.A. 90, 9508-9512, 1993
A>Title: Molecular characterization of monoclonal CRI-A-positive anti-arsonate antibodies
A:Reference number: A48677; MUID:94022404; PMID:8415731

A:Accession: G48677
A>Status: preliminary; not compared with conceptual translation
A:Molecule type: mRNA
A:Residues: 1-123 <TAS>
C:Superfamily: immunoglobulin V region; immunoglobulin homology
C:Keywords: heterotrimer; immunoglobulin
F;15-98/Domain: immunoglobulin homology <IMW>

Query Match 55.4%; Score 41; DB 2; Length 123;
Best Local Similarity 64.3%; Pred. No. 3.9;
Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;
QY 2 YIKANSKFI-GITE 15
Db 57 YIKYNEKPKGTTTL 70

RESULT 14
H97146
siderophore/surfactin synthetase related protein [imported] - Clostridium acetobutylicu
C:Species: Clostridium acetobutylicum
C>Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 09-Jul-2004
C:Accession: H97146
R;Nolling, J.; Bretton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Lee
J. Bacteriol. 183, 4823-4838, 2001
A>Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Cl
A:Reference number: A96900; MUID:21359325; PMID:21359325
A:Accession: H97146
A>Status: preliminary
A:Molecule type: DNA
A:Residues: 1-447 <KUR>
A:Cross-references: UNIPROT:Q97HK7; GB:AE001437; PIDN:AAK79963.1; PID:GI5024986; GSPDB:C
A:Experimental source: Clostridium acetobutylicum ATCC824
C:Genetics:
A:Gene: CAC2004

Query Match 55.4%; Score 41; DB 2; Length 447;
Best Local Similarity 63.6%; Pred. No. 15;
Matches 7; Conservative 2; Mismatches 2; Indels 0; Gaps 0;
QY 1 QYIKANSKPIG 11
Db 291 KYIRTNKKPIG 301

RESULT 15
G36812
hypothetical protein ORF63 - saimirine herpesvirus 1 (strain 11)
C:Species: saimirine herpesvirus 1
A>Note: host Saimiri sciureus (common squirrel monkey)
C>Date: 16-Oct-1992 #sequence_revision 16-Oct-1992 #text_change 08-Oct-1999
C:Accession: G36812
R;Albrecht, J.
submitted to the EMBL Data Library, January 1992
A:Description: Primary structure of the herpesvirus saimiri genome.
A:Reference number: A36806
A:Accession: G36812
A:Molecule type: DNA
A:Residues: 1-899 <ALB>
A:Cross-references: GB:X64346; NID:960320; PIDN:CAA45686.1; PID:G60384
R;Albrecht, J.C.; Nicholas, J.; Biller, D.; Cameron, K.R.; Biesinger, B.; Newman, C.; W
J. Virol. 66, 5047-5058, 1992
A>Title: Primary structure of the herpesvirus saimiri genome.
A:Reference number: A37309; MUID:92333688; PMID:1321287
A:Contents: annotation; protein-coding frames
A>Note: neither protein nor nucleotide sequence is given
C:Genetics:
A:Gene: 63

Query Match 55.4%; Score 41; DB 2; Length 899;
Best Local Similarity 50.0%; Pred. No. 31;
Matches 7; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITE 14
||| : | : | : |
Db 124 QYITSNATFGLSE 137

RESULT 16

S29980
class II histocompatibility antigen - Atlantic salmon
C:Species: Salmo salar (Atlantic salmon)
C:Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Jul-2004
C:Accession: S29980
R:Hordvik, I.

submitted to the EMBL Data Library, October 1992

A:Reference number: S29980
A:Accession: S29980
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-245 <HOR>
A:Cross-references: UNIPROT:Q31591; EMBL:X70167; NID:g64371; PID:g64372
C:Superfamily: class II histocompatibility antigen; immunoglobulin homology

Query Match 54.7%; Score 40.5; DB 2; Length 245;

Best Local Similarity 44.4%; Pred. No. 9.9;
Matches 8; Conservative 5; Mismatches 2; Indels 3; Gaps 1;

QY 1 QYIKANS--KFIGITEL 15

Db 53 EYVRFNSTGVGYGYTEL 70

RESULT 17

D85794
hypothetical protein Z2873 [imported] - Escherichia coli (strain O157:H7, substrain EDL933)
C:Species: Escherichia coli

C:Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004

C:Accession: D85794
R:Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.D.; Rose, D.J.; Mayhew
Miller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Potamoudis, K.; Apodaca,
Nature 409, 529-533, 2001

A:Title: Genome sequence of enterohemorrhagic Escherichia coli O157:H7.

A:Reference number: A85480; MUID:21074935; PMID:11206551

A:Accession: D85794

A:Status: preliminary

A:Molecule type: DNA

A:Residues: 1-79 <STO>

A:Cross-references: UNIPROT:Q8X4G6; GB:AE005174; NID:gl2515873; PIDN:AAG56816.1; GSPDB:G

A:Experimental source: strain O157:H7, substrain EDL933

C:Genetics:
A:Gene: Z2873

Query Match 54.1%; Score 40; DB 2; Length 79;

Best Local Similarity 50.0%; Pred. No. 3.8;
Matches 7; Conservative 3; Mismatches 4; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITE 14

Db 52 QYLUKSGFLGID 65

RESULT 18

G64026
[acyl-carrier-protein] phosphodiesterase (EC 3.1.4.14) H11366 - Haemophilus influenzae

N:Alternate names: conserved hypothetical protein H11366

C:Species: Haemophilus influenzae

C:Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Jul-2004

C:Accession: G64026

R:Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage, A

; Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman, J

; D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghegan, N.S.M.

Science 269, 496-512, 1995

A:Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Venter,

A:Title: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd.

A:Reference number: A64000; MUID:95350630; PMID:7542800

A:Accession: G64026

A:Status: nucleic acid sequence not shown; translation not shown

A:Molecule type: DNA

A:Residues: 1-194 <TIGR>

A:Cross-references: UNIPROT:P43013; GB:U32816; GB:L42023; NID:gl574193; PIDN:AAC23013.1

A:Experimental source: strain Rd KW20

C:Function:

A:Description: catalyzes hydrolysis of the phosphopantetheine residue from holo-acyl-ca

C:Superfamily: acyl carrier protein phosphodiesterase

C:Keywords: phosphoric diester hydrolase

Query Match 54.1%; Score 40; DB 2; Length 194;

Best Local Similarity 53.3%; Pred. No. 9.7;
Matches 8; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

Db 147 QYMKSTLGFITGV 161

RESULT 19

A55485

oligopeptidase (EC 3.4.24.-) pepF [validated] - Lactococcus lactis

N:Alternate names: metalloendopeptidase

C:Species: Lactococcus lactis

C:Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004

C:Accession: A55485; S49150

R:Monnet, V.; Nardi, M.; Chopin, A.; Chopin, M.C.; Gripon, J.C.

J. Biol. Chem. 269, 32070-32076, 1994

A:Title: Biochemical and genetic characterization of PepF, an oligopeptidase from Lacto

A:Reference number: A55485; MUID:95096044; PMID:7798200

A:Accession: A55485

A:Status: preliminary; translated from GB/EMBL/DBJ

A:Molecule type: DNA

A:Residues: 1-601 <RES>

A:Cross-references: UNIPROT:P54124; EMBL:Z32522; NID:g510139; PIDN:CAA83534.1; PID:g510

C:Genetics:

A:Gene: pepF

C:Function:

A:Description: EC 3.4.24.-; oligopeptidase [validated, MUID:95096044]; hydrolyzes pepti

C:Superfamily: oligoendopeptidase F

C:Keywords: hydrolase; metalloproteinase

Query Match 54.1%; Score 40; DB 1; Length 601;

Best Local Similarity 46.7%; Pred. No. 31;
Matches 7; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

Db 284 RYIELRKILGITDL 298

RESULT 20

G86840

oligoendopeptidase F [imported] - Lactococcus lactis subsp. lactis (strain IL1403)

C:Species: Lactococcus lactis subsp. lactis

C:Date: 23-Mar-2001 #sequence_revision 23-Mar-2001 #text_change 09-Jul-2004

C:Accession: G86840

R:Rolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarre, K.; Weissenbach, J.; Ehrh

Genome Res. 11, 731-753, 2001

A:Title: The complete genome sequence of the lactic acid bacterium Lactococcus lactis s

A:Reference number: A86625; MUID:21235196; PMID:11337471

A:Accession: G86840

A:Status: preliminary

A:Molecule type: DNA

A:Residues: 1-601 <STO>

A:Cross-references: UNIPROT:O9CEV7; GB:AE005176; PID:gl2724746; PIDN:AAK05825.1; GSPDB:

A:Experimental source: strain IL1403

C:Genetics:

A:Gene: pepF

C:Superfamily: oligoendopeptidase F

Query Match 54.1%; Score 40; DB 2; Length 601;
 Best Local Similarity 46.7%; Pred. No. 31;
 Matches 7; Conservative 4; Mismatches 4; Indels 0; Gaps 0;

QY 1 QYKANSKFIGITEL 15
 DB 284 RYELRKILGITDL 298
 :||: ||:|:|:|

RESULT 21
 S46746
 hypothetical protein YHR039c - yeast (Saccharomyces cerevisiae)
 N/Alternate names: hypothetical protein H8179.19
 C/Species: Saccharomyces cerevisiae
 C/Date: 28-Oct-1994 #sequence_revision 28-Oct-1994 #text_change 09-Jul-2004
 C/Accession: S46746
 R;Du, Z.
 submitted to the EMBL Data Library, May 1994
 A/Description: The sequence of S. cerevisiae cosmid 8179.
 A/Reference number: S46732
 A/Accession: S46746
 A/Molecule type: DNA
 A/Residues: 1-644 <DUZ>
 A/Cross-references: UNIPROT:P38694; EMBL:U00062; PID:g488162; GSPDB:GN00008
 C/Genetics:
 A/Gene: SGD:MSC7; MIPS:YHR039c
 A/Cross-references: SGB:S0001081
 A/Map position: 8R
 C/Superfamily: NAD-dependent aldehyde dehydrogenase

Query Match 54.1%; Score 40; DB 2; Length 644;
 Best Local Similarity 60.0%; Pred. No. 33;
 Matches 9; Conservative 1; Mismatches 5; Indels 0; Gaps 0;

QY 1 QYKANSKFIGITEL 15
 DB 38 QIIQDNQKLIGITTL 52
 ||:|:|:|:|

RESULT 22
 PH1491
 Ig heavy chain V region (clone XR26-3) - mouse (fragment)
 C/Species: Mus musculus (house mouse)
 C/Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
 C/Accession: PH1491
 R;Giusti, A.M.; Manser, T.
 J. Exp. Med. 177, 797-809, 1993
 A/Title: Hypermutation is observed only in antibody H chain V region transgenes that have
 d for somatic mutation.
 A/Reference number: PH1482; MUID:93171820; PMID:8436910
 A/Accession: PH1491
 A/Status: translation not shown
 A/Molecule type: mRNA
 A/Residues: 1-102 <GIU>
 A/Experimental source: hybridoma cell
 C/Superfamily: immunoglobulin V region; immunoglobulin homology
 C/Keywords: heterotetramer; immunoglobulin

Query Match 52.7%; Score 39; DB 2; Length 102;
 Best Local Similarity 64.3%; Pred. No. 7.6;
 Matches 9; Conservative 0; Mismatches 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
 DB 38 YIKYNEKFKGKTTL 51
 ||||| |||||

RESULT 23
 PH1518
 Ig heavy chain V region (clone X41-21) - mouse (fragment)
 C/Species: Mus musculus (house mouse)
 C/Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
 C/Accession: PH1518

R;Giusti, A.M.; Manser, T.
 J. Exp. Med. 177, 797-809, 1993
 A/Title: Hypermutation is observed only in antibody H chain V region transgenes that have
 d for somatic mutation.
 A/Reference number: PH1482; MUID:93171820; PMID:8436910
 A/Accession: PH1518
 A/Status: translation not shown
 A/Molecule type: DNA
 A/Residues: 1-119 <GIU>
 A/Experimental source: hybridoma cell
 C/Genetics:
 A/Introns: 3/1
 C/Superfamily: immunoglobulin V region; immunoglobulin homology
 C/Keywords: heterotetramer; immunoglobulin
 F;21-104/Domain: immunoglobulin homology <IMM>

Query Match 52.7%; Score 39; DB 2; Length 119;
 Best Local Similarity 64.3%; Pred. No. 8.9;
 Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
 DB 63 YIKYNEKFKGKTTL 76
 ||||| |||||

RESULT 24
 PH1516
 Ig heavy chain V region (clone X41-4) - mouse (fragment)
 C/Species: Mus musculus (house mouse)
 C/Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
 C/Accession: PH1516
 R;Giusti, A.M.; Manser, T.
 J. Exp. Med. 177, 797-809, 1993
 A/Title: Hypermutation is observed only in antibody H chain V region transgenes that have
 d for somatic mutation.
 A/Reference number: PH1482; MUID:93171820; PMID:8436910
 A/Accession: PH1516
 A/Status: translation not shown
 A/Molecule type: DNA
 A/Residues: 1-119 <GIU>
 A/Experimental source: hybridoma cell
 C/Genetics:
 A/Introns: 3/1
 C/Superfamily: immunoglobulin V region; immunoglobulin homology
 C/Keywords: heterotetramer; immunoglobulin
 F;21-104/Domain: immunoglobulin homology <IMM>

Query Match 52.7%; Score 39; DB 2; Length 119;
 Best Local Similarity 64.3%; Pred. No. 8.9;
 Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
 DB 63 YIKYNEKFKGKTTL 76
 ||||| |||||

RESULT 25
 PH1519
 Ig heavy chain V region (clone X41-29) - mouse (fragment)
 C/Species: Mus musculus (house mouse)
 C/Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 07-May-1999
 C/Accession: PH1519
 R;Giusti, A.M.; Manser, T.
 J. Exp. Med. 177, 797-809, 1993
 A/Title: Hypermutation is observed only in antibody H chain V region transgenes that have
 d for somatic mutation.
 A/Reference number: PH1482; MUID:93171820; PMID:8436910
 A/Accession: PH1519
 A/Status: translation not shown
 A/Molecule type: DNA
 A/Residues: 1-119 <GIU>
 A/Experimental source: hybridoma cell
 C/Genetics:

A;Introns: 3/1
C;Superfamily: immunoglobulin V region; immunoglobulin homology
C;Keywords: heterotetramer; immunoglobulin
F;21-104/Domain: immunoglobulin homology <IMM>

Query Match 52.7%; Score 39; DB 2; Length 119;
Best Local Similarity 64.3%; Pred. No. 8.9;
Matches 9; Conservative 0; Mismatches 5; Indels 0; Gaps 0;

QY 2 YIKANSKFIGITEL 15
| | | | | | | | | |
Db 63 YIKYNEKFKKTYL 76

Search completed: January 25, 2005, 06:09:22
Job time : 23.9167 secs

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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:08 ; Search time 49.5833 Seconds
(without alignments)
174.063 Million cell updates/sec

Title: US-09-806-703A-12
Perfect score: 74
Sequence: 1 QYIKANSKFIGITEL 15

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : UniProt_02:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	74	100.0	1310	2 Q93N27	Q93N27 clostridium
2	74	100.0	1314	1 TETX_CLOTE	P04958 clostridium
3	46	62.2	447	2 Q7V0H3	Q7V0H3 candidatus
4	46	62.2	880	1 SYA_ENTFA	Q835J8 entrococcus
5	44.5	60.1	60	2 Q31585	Q31585 salmo salar
6	44.5	60.1	71	2 Q9XJ99	Q9XJ99 salvelinus
7	44.5	60.1	85	2 Q95HY1	Q95HY1 salmo salar
8	44.5	60.1	85	2 Q95IS2	Q95IS2 salmo salar
9	44.5	60.1	86	2 Q95HX4	Q95HX4 salmo salar
10	44.5	60.1	244	2 Q31590	Q31590 salmo salar
11	44	59.5	66	1 VG84_BPML5	Q05301 mycobacteri
12	44	59.5	546	2 Q9XG37	Q9XG37 guillardia
13	43.5	58.8	67	2 Q31578	Q31578 salmo salar
14	43	58.1	180	2 Q9CF66	Q9CF66 lactococcus
15	43	58.1	250	2 Q9MCL7	Q9MCL7 streptococ
16	43	58.1	232	2 Q9XJE8	Q9XJE8 lactococcus
17	43	58.1	291	2 Q9CRV4	Q9CRV4 mus musculu
18	43	58.1	304	2 Q8K2A1	Q8K2A1 mus musculu
19	43	58.1	309	2 Q9CYD2	Q9CYD2 mus musculu
20	43	58.1	361	2 Q6LHK1	Q6LHK1 photobacter
21	43	58.1	361	2 CAG23229	CAG23229 photobact
22	43	58.1	394	2 Q6LJK0	Q6LJK0 photobacter
23	43	58.1	394	2 CAG22530	CAG22530 photobact
24	43	58.1	395	2 Q6LGL2	Q6LGL2 photobacter
25	43	58.1	395	2 Q6LGM3	Q6LGM3 photobacter
26	43	58.1	395	2 Q6LGN3	Q6LGN3 photobacter
27	43	58.1	395	2 CAG23341	CAG23341 photobact
28	43	58.1	395	2 CAG23547	CAG23547 photobact
29	43	58.1	395	2 CAG23557	CAG23557 photobact
30	43	58.1	395	2 CAG23568	CAG23568 photobact
31	43	58.1	407	2 Q6LGM1	Q6LGM1 photobacter

32 43 58.1 407 2 Q6LID6 Q6LID6 photobacter
33 43 58.1 407 2 Q6LV51 Q6LV51 photobacter
34 43 58.1 407 2 CAG18824 CAG18824 photobact
35 43 58.1 407 2 CAG22944 CAG22944 photobact
36 43 58.1 407 2 CAG23559 CAG23559 photobact
37 43 58.1 572 2 Q8H8F3 Q8H8F3 oryza sativ
38 43 58.1 899 2 Q9YTK4 Q9YTK4 ateline her
39 42.5 57.4 1087 2 Q25961 Q25961 plasmodium
40 42.5 57.4 1682 1 MSP1_PLAF3 P19598 plasmodium
41 42.5 57.4 1688 2 Q764K9 Q764K9 plasmodium
42 42.5 57.4 1688 2 Q764L0 Q764L0 plasmodium
43 42.5 57.4 1688 2 BAD08401 BAD08401 plasmodiu
44 42.5 57.4 1688 2 BAD08402 BAD08402 plasmodiu
45 42.5 57.4 1689 2 Q764K8 Q764K8 plasmodium

ALIGNMENTS

RESULT 1
Q93N27 PRELIMINARY; PRT; 1310 AA.
ID Q93N27;
AC Q93N27;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Tetanus toxin (Fragment).
OS Clostridium tetani.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1513;
RN [1]
RP SEQUENCE FROM N.A.
RA Shumin Z., Dianliang L.;
RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.
RL EMBL; AF389424; AAK72964.2;
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR Pfam; PF01742; Peptidase M27; I.
DR PRINTS; PR00760; BOTOXILYSIN.
DR ProDom; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
FT NON_TER 1 1310
SQ SEQUENCE 1310 AA; 150316 MW; 9EADDC914418E450 CRC64;

Query Match 100.0%; Score 74; DB 2; Length 1310;
Best Local Similarity 100.0%; Pred. No. 0.00021;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
|||
Db 831 QYIKANSKFIGITEL 845

RESULT 2
TETX_CLOTE STANDARD; PRT; 1314 AA.
ID TETX_CLOTE
AC P04958;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Tetanus toxin precursor [EC 3.4.24.68] (Tentoxylisin) (Contains:
DE Tetanus toxin light chain (Tetanus toxin chain L); Tetanus toxin heavy
DE chain (Tetanus toxin chain H)).
GN Name=tetX; OrderedLocusNames=ctp60;
OS Clostridium tetani.

OG Plasmid pE88, and plasmid 75 Kbp.
 OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
 OC Clostridium.
 OX NCBI_TaxID=1513;
 RN (1)
 RN SEQUENCE FROM N.A.
 RC PLASMID=75 Kbp; PubMed=3536478;
 RX MEDLINE=87053814; PubMed=3536478;
 RA Eisel U., Jarausch W., Goretzki K., Henschen A., Engels J., Weller U.,
 HUDEL M., Habermann E., Niemann H.;
 RT "Tetanus toxin: primary structure, expression in E. coli, and homology
 with botulinum toxins.";
 RL EMBO J. 5:2495-2502(1986).
 RN (2)
 RN SEQUENCE FROM N.A.
 RC STRAIN=CN3911; PLASMID=75 Kbp;
 RX MEDLINE=87040747; PubMed=3774547;
 RA Fairweather N.F., Lyness V.A.;
 RT "The complete nucleotide sequence of tetanus toxin.";
 RL Nucleic Acids Res. 14:7809-7812(1986).
 RN (3)
 RN SEQUENCE FROM N.A.
 RC STRAIN=Massachusetts / E88; PLASMID=pE88;
 RX MEDLINE=22457253; PubMed=12552129; DOI=10.1073/pnas.0335853100;
 RA Brueggemann H., Baumer S., Fricke W.F., Wierzer A., Liesegang H.,
 RA Decker I., Herzberg C., Martinez-Arias R., Merkl R., Henne A.,
 RA Gottschalk G.;
 RT "The genome sequence of Clostridium tetani, the causative agent of
 tetanus disease.";
 RL Proc. Natl. Acad. Sci. U.S.A. 100:1316-1321(2003).
 RN (4)
 RN SEQUENCE OF 742-1314 FROM N.A.
 RC PLASMID=75 Kbp;
 RX MEDLINE=86085672; PubMed=3510187;
 RA Fairweather N.F., Lyness V.A., Pickard D.J., Allen G., Thomson R.O.;
 RT "Cloning, nucleotide sequencing, and expression of tetanus toxin
 fragment C in Escherichia coli.";
 RL J. Bacteriol. 165:21-27(1986).
 RN (5)
 RN PARTIAL SEQUENCE, AND DISULFIDE BONDS.
 RX MEDLINE=90201034; PubMed=2108021;
 RA Krieglstein K., Henschen A., Weller U., Habermann E.;
 RT "Arrangement of disulfide bridges and positions of sulfhydryl groups
 in tetanus toxin.";
 RL Eur. J. Biochem. 188:39-45(1990).
 RN (6)
 RN PARTIAL SEQUENCE.
 RX MEDLINE=92037649; PubMed=1935979;
 RA Krieglstein K.G., Henschen A.H., Weller U., Habermann E.;
 RT "Limited proteolysis of tetanus toxin. Relation to activity and
 identification of cleavage sites.";
 RL Eur. J. Biochem. 202:41-51(1991).
 RN (7)
 RN IDENTIFICATION AS ZINC-PROTEASE.
 RX MEDLINE=93010948; PubMed=1396558;
 RA Schiavo G., Poulain B., Rossetto O., Benfenati F., Tauc L.,
 RA Montecucco C.;
 RT "Tetanus toxin is a zinc protein and its inhibition of
 neurotransmitter release and protease activity depend on zinc.";
 RL EMBO J. 11:3577-3583(1992).
 RN (8)
 RN IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=93063293; PubMed=1331807;
 RA Schiavo G., Benfenati F., Poulain B., Rossetto O., de Laureto P.P.,
 RA Dasgupta B.R., Montecucco C.;
 RT "Tetanus and botulinum-B neurotoxins block neurotransmitter release by
 proteolytic cleavage of synaptobrevin.";
 RL Nature 359:832-835(1992).
 RN (9)
 RN X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS) OF 874-1314.
 RX MEDLINE=97475217; PubMed=9334741;
 RA Umland T.C., Wingert L.M., Swaminathan S., Furey W.F., Schmidt J.J.,
 RA Sax M.;

RT "Structure of the receptor binding fragment HC of tetanus
 RT neurotoxin.";
 RL Nat. Struct. Biol. 4:788-792(1997).
 CC -!- FUNCTION: Tetanus toxin acts by inhibiting neurotransmitter
 release. It binds to peripheral neuronal synapses, is internalized
 and moves by retrograde transport up the axon into the spinal cord
 where it can move between postsynaptic and presynaptic neurons. It
 inhibits neurotransmitter release by acting as a zinc
 endopeptidase that catalyzes the hydrolysis of the 76-Gln-Phe-77
 bond of synaptobrevin-2.
 CC -!- CATALYTIC ACTIVITY: Hydrolysis of 76-Gln-Phe-77 bond in
 synaptobrevin 2.
 CC -!- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -!- SUBUNIT: The precursor polypeptide is subsequently cleaved to
 yield subchains L and H. These remain linked by a disulfide bridge
 and are non-toxic after separation.
 CC -!- MISCELLANEOUS: The C-terminus of the heavy chain binds to
 ganglioside receptors.
 CC -!- SIMILARITY: Belongs to peptidase family M27.
 CC
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 CC EMBL; X04436; CAA28033.1; -;
 CC EMBL; X06214; CAA29564.1; -;
 CC EMBL; AF528097; AAO37454.1; -;
 CC EMBL; M12739; AAM23282.1; -;
 CC FIR; A25689; BTCLTN.
 CC PDB; 1A8D; X-ray; @=863-1314.
 CC PDB; 1AF9; X-ray; @=863-1314.
 CC PDB; 1D0H; X-ray; A=846-1314.
 CC PDB; 1DQF; X-ray; A=871-1314.
 CC PDB; 1DIW; X-ray; A=874-1314.
 CC PDB; 1DIL; X-ray; A=874-1314.
 CC PDB; 1FV2; X-ray; A=843-1314.
 CC PDB; 1FV3; X-ray; A/B=843-1314.
 CC MEROPS; M27.001; -;
 CC InterPro; IPR008985; ConA like lec_gl.
 CC InterPro; IPR011065; Kunitz-like
 CC InterPro; IPR000395; Peptidase_M27.
 CC InterPro; IPR006025; Pept_M_Zn_BS.
 CC Pfam; PF01742; Peptidase_M27; 1.
 CC PRINTS; PR00760; BONTOKILYSIN.
 CC ProDom; PD001963; Bontoxilysin; 1.
 CC PROSITE; PS00142; ZINC_PROTEASE; 1.
 CC 3D-structure; Complete proteome; Direct protein sequencing; Hydrolase;
 KW Metalloprotease; Neurotoxin; Plasmid; Transmembrane; Zinc.
 FT INIT MET 0
 FT CHAIN 1 456 Tetanus toxin light chain.
 FT CHAIN 457 1314 Tetanus toxin heavy chain.
 FT METAL 232 233 Zinc (catalytic) (By similarity).
 FT ACT_SITE 233 233 By similarity.
 FT METAL 236 246 Zinc (catalytic) (By similarity).
 FT TRANSMEM 226 246 Potential.
 FT TRANSMEM 669 689 Potential.
 FT DISULFID 438 466 Interchain.
 FT DISULFID 1076 1092
 FT HELIX 876 882
 FT TURN 883 883
 FT STRAND 884 891
 FT TURN 892 893
 FT STRAND 894 897
 FT STRAND 904 907
 FT TURN 909 910
 FT STRAND 912 915
 FT STRAND 920 925
 FT TURN 928 929
 FT STRAND 932 935

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FT HELIX 938 940
FT TURN 941 946
FT STRAND 949 956
FT HELIX 962 968
FT TURN 969 970
FT STRAND 972 977
FT STRAND 980 981
FT HELIX 983 985
FT STRAND 987 995
FT TURN 996 997
FT STRAND 998 1004
FT TURN 1006 1007
FT STRAND 1010 1016
FT STRAND 1020 1020
FT TURN 1021 1022
FT STRAND 1031 1037
FT TURN 1039 1040
FT STRAND 1042 1047
FT TURN 1048 1049
FT STRAND 1050 1056
FT TURN 1058 1059
FT STRAND 1068 1074
FT TURN 1079 1080
FT STRAND 1082 1091
FT HELIX 1097 1105
FT TURN 1106 1107
FT STRAND 1112 1112
FT STRAND 1114 1114
FT TURN 1116 1117
FT STRAND 1120 1120
FT STRAND 1122 1122
FT TURN 1123 1124
FT STRAND 1127 1131
FT HELIX 1132 1134
FT TURN 1135 1136
FT STRAND 1137 1141
FT TURN 1144 1145
FT STRAND 1148 1152
FT STRAND 1155 1158
FT TURN 1159 1162
FT STRAND 1163 1166
FT STRAND 1173 1178
FT TURN 1184 1185
FT STRAND 1188 1188

Query Match 100.0%; Score 74; DB 1; Length 1314;
Best Local Similarity 100.0%; Pred. No. 0.00021;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 829 QYIKANSKFIGITEL 843

RESULT 3
Q7VQH3 PRELIMINARY; PRT; 447 AA.
AC Q7VQH3
DT 01-OCT-2003 (TEMBLrel. 25, Created)
DT 01-OCT-2003 (TEMBLrel. 25, Last sequence update)
DT 01-MAR-2004 (TEMBLrel. 26, Last annotation update)
DE Enolase (EC 4.2.1.11).
GN Name:eno; OrderedLocNames=Bfl1157;
OS Candidatus Blochmannia floridanus.
OC Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
OC Enterobacteriaceae; ant endosymbionts; Candidatus Blochmannia.
OX NCBI_TaxID=203907;
RN [1]
RP SEQUENCE FROM N.A.
RA G11 R., Silva F.J., Zientz E., Delmotte F., Gonzalez-Candelas F.,
RA Latorre A., Rausell C., Kamerbeek J., Gadau J., Hoelldobler B.,
RA van Ham R.C.H.J., Gross R., Moya A.;
MEDLINE=22784745; PubMed=12986019;
RP SEQUENCE FROM N.A.
RA G11 R., Silva F.J., Zientz E., Delmotte F., Gonzalez-Candelas F.,
RA Latorre A., Rausell C., Kamerbeek J., Gadau J., Hoelldobler B.,
RA van Ham R.C.H.J., Gross R., Moya A.;
MEDLINE=22784745; PubMed=12986019;

The genome sequence of Blochmannia floridanus: comparative analysis
of reduced genomes."
Proc. Natl. Acad. Sci. U.S.A. 100:9388-9393(2003).
-!- CATALYTIC ACTIVITY: 2-phospho-D-glycerate = phosphoenolpyruvate +
H(2)O.
-!- COFACTOR: Magnesium is required for catalysis and for stabilizing
the dimer (By similarity).
-!- PATHWAY: Glycolysis.
-!- SUBUNIT: Homodimer (By similarity).
-!- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).
-!- SIMILARITY: Belongs to the enolase family.
EMBL: BX248584; CAD83678.1; -.
DR GO; GO:0000015; C:phosphopyruvate hydratase complex; IEA.
DR GO; GO:0016829; F:lyase activity; IEA.
DR GO; GO:0000287; F:magnesium ion binding; IEA.
DR GO; GO:0004634; F:phosphopyruvate hydratase activity; IEA.
DR GO; GO:0006096; P:glycolysis; IEA.
DR InterPro; IPR000941; Enolase.
DR Pfam; PF00113; Enolase_C; 1.
DR Pfam; PF03952; Enolase_N; 1.
DR ProDom; PD000902; Enolase; 1.
DR TIGRFAMs; TIGR01060; eno; 1.
DR PROSITE; PS00164; ENOLASE; 1.
KW Complete proteome; Glycolysis; Lyase; Magnesium.
SQ SEQUENCE 447 AA; 49005 MW; 465B69C3273C7AC4 CRC64;

Query Match 62.2%; Score 46; DB 2; Length 447;
Best Local Similarity 46.7%; Pred. No. 11;
Matches 7; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 416 EFLKNSKFGVNEI 430

RESULT 4
SYA ENTEFA
ID SYA ENTEFA STANDARD; PRT; 880 AA.
AC Q83J8;
DT 29-MAR-2004 (Rel. 43, Created)
DT 29-MAR-2004 (Rel. 43, Last sequence update)
DT 01-OCT-2004 (Rel. 45, Last annotation update)
DE Alanyl-tRNA synthetase (EC 6.1.1.7) (Alanine--tRNA ligase) (AlaRS).
GN Name:alas; OrderedLocNames=EFl379;
OS Enterococcus faecalis (Streptococcus faecalis).
OC Bacteria; Firmicutes; Lactobacillales; Enterococcaceae; Enterococcus.
OX NCBI_TaxID=1351;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=V583 / ATCC 700802;
RX MEDLINE=22550857; PubMed=12663927; DOI=10.1126/science.1080613;
RA Paulsen I.T., Banerjee L., Myers G.S.A., Nelson K.E., Seshadri R.,
RA Read T.D., Fouts D.E., Eisen J.A., Gill S.R., Heidelberg J.F.,
RA Tettelin H., Dodson R.J., Umayam L.A., Brinkac L.M., Beanan M.J.,
RA Daugherty S.C., DeBoy R.T., Durkin S.A., Kolonay J.F., Madupu R.,
RA Nelson W.C., Vamathevan J.J., Tran B., Upton J., Hansen T., Shetty J.,
RA Khouri H.M., Utterback T.R., Radune D., Ketchum K.A., Dougherty B.A.,
RA Fraser C.M.;
RT "Role of mobile DNA in the evolution of vancomycin-resistant
RT Enterococcus faecalis."
RL Science 299:2071-2074(2003).
-!- CATALYTIC ACTIVITY: ATP + L-alanine + tRNA(Ala) = AMP +
diphosphate + L-alanyl-tRNA(Ala).
-!- SUBCELLULAR LOCATION: Cytoplasmic.
-!- SIMILARITY: Belongs to class-II aminoacyl-tRNA synthetase family.
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or send an email to license@isb-sib.ch).
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Db 33 EYIRFNSTVGKFGVGYTEL 50
      ||: || || ||: || || ||
RESULT 8
Q95IS2 PRELIMINARY; PRT; 85 AA.
AC Q95IS2
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE MHC class II beta chain (Fragment).
OS Salmo salar (Atlantic salmon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
OX NCBI_TaxID=8030;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21608277; PubMed=11742552;
RA Landry C., Bernatchez L.;
RT "Comparative analysis of population structure across environments and
RT geographical scales at major histocompatibility complex and
RT microsatellite loci in Atlantic salmon (Salmo salar).";
RL Mol. Ecol. 10:2525-2539 (2001).
DR EMBL; AF373699; AAK61882.1; -.
DR GO; GO:0016021; C: integral to membrane; IEA.
DR GO; GO:0045012; F: MHC class II receptor activity; IEA.
DR GO; GO:0019884; P: antigen presentation, exogenous antigen; IEA.
DR GO; GO:0019886; P: antigen presentation, exogenous antigen via M. . .; IEA.
DR GO; GO:0006955; P: immune response; IEA.
DR InterPro; IPR000353; MHC II beta.
DR Pfam; PF00969; MHC II beta; 1.
DR ProDom; PD000328; MHC II beta; 1.
DR Glycoprotein; MHC II; Transmembrane.
FT NON_TER 1
FT NON_TER 85
SQ SEQUENCE 85 AA; 9743 MW; 3214E01AD1B66AC5 CRC64;

Query Match 60.1%; Score 44.5; DB 2; Length 85;
Best Local Similarity 55.6%; Pred. No. 4;
Matches 10; Conservative 3; Mismatches 2; Indels 3; Gaps 1;

QY 1 QYIKANS---KFIGITEL 15
      ||: || || ||: || || ||
Db 33 EYIRFNSTVGKFGVGYTEL 50
      ||: || || ||: || || ||
RESULT 10
Q31590 PRELIMINARY; PRT; 244 AA.
AC Q31590
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE MHC class II.
DE Names=Mhc-Sasa class II B;
OS Salmo salar (Atlantic salmon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
OX NCBI_TaxID=8030;
RN [1]
RP SEQUENCE FROM N.A.
RX TISSUE=Leukocytes;
RX MEDLINE=93170890; PubMed=8436418;
RA Hordvik I., Grimholt U., Fosse V.M., Lie Y., Endresen C.;
RT "Cloning and sequence analysis of cDNAs encoding the MHC class II a-
RT chain in Atlantic salmon, Salmo salar.";
RL Immunogenetics 37:437-441 (1993).
DR EMBL; X70166; CAA49725.1; -.
DR PIR; S29982; S29982.
DR HSSP; P04228; 1ES0.
DR GO; GO:0016020; C: membrane; IEA.
DR GO; GO:0006955; P: immune response; IEA.
DR InterPro; IPR007110; Ig-like.
DR InterPro; IPR003597; Ig_c1.
DR InterPro; IPR000353; MHC II beta.
DR Pfam; PF07654; C1-set; 1.
DR ProDom; PD000328; MHC II beta; 1.
DR SMART; SM00407; IGc1; 1.
DR PROSITE; PS00835; IG_LIKE; 1.
DR Glycoprotein; MHC II; Transmembrane.
SQ SEQUENCE 244 AA; 27449 MW; 496CB9EA9D73765C CRC64;

Query Match 60.1%; Score 44.5; DB 2; Length 244;
Best Local Similarity 55.6%; Pred. No. 11;
Matches 10; Conservative 3; Mismatches 2; Indels 3; Gaps 1;

QY 1 QYIKANS---KFIGITEL 15
      ||: || || ||: || || ||
Db 51 EYIRFNSTVGKFGVGYTEL 68
      ||: || || ||: || || ||
RESULT 11
VG84 BPML5
ID VG84 BPML5 STANDARD; PRT; 66 AA.
AC Q05301;
DT 01-FEB-1994 (Rel. 28, Created)
DT 01-FEB-1994 (Rel. 28, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
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RESULT 13
Q31578 PRELIMINARY; PRT; 67 AA.
ID AC
Q31578;
AC Q31578;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-JUN-2003 (TREMBLrel. 24, Last annotation update)
DE Salmo salar (DB03) MHC class II beta 1 (Fragment).
OS Salmo salar (Atlantic salmon).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Actinopterygii; Neopterygii; Teleostei; Euteleostei;
OC Protacanthopterygii; Salmoniformes; Salmonidae; Salmo.
OC NCBI_Taxid=8039;
RN [1]
RP SEQUENCE FROM N.A.
RR Grinnolt U., Olsaker I., de Vries Lindstrom C., Lie O.;
RR Submitted (Oct-1993) to the EMBL/GenBank/DBJ databases.
RR EMBL; L24929; AAA49590.1; -.
DR GO; GO:0015021; C:integral to membrane; IEA.
DR GO; GO:0045012; F:MHC Class II receptor activity; IEA.
DR GO; GO:0019884; P:antigen presentation, exogenous antigen; IEA.
DR GO; GO:0019886; P:antigen processing, exogenous antigen via M. .; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR000353; MHC II beta.
DR Pfam; PF00969; MHC II beta; 1.
DR ProDom; PD000328; MHC II beta; 1.
DR Glycoprotein; MHC II-Transmembrane.
KW 1
FT NON_TER 67
FT NON_TER 67
FT SEQUENCE 67 AA; 7449 MW; 42771AEDBARA6626 CRC64;
SQ

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Matches      9;  Conservative      4;  Mismatches      2;  Indels      3;  Gaps      1;

QY      1 QYIKANS----KFIGITEL 15
Db      :|:| | | | | | | |
      16 EYVRFNSTVGKFGVGYTEL 33

RESULT 14
Q9CF66 PRELIMINARY; PRT; 180 AA.
ID AC Q9CF66;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Spermidine acetyltransferase (EC 2.3.1.57).
GN Name=yqfF; Ordered locus Names=L1615;
OS Lactococcus lactis (subsp. lactis) (Streptococcus lactis).
OC Bacteria; Firmicutes; Lactobacillales; Streptococcaceae; Lactococcus.
OX NCBI_TaxID=1360;
[1] _RN
RP SEQUENCE FROM N.A.
RC STRAIN=Il1403;
RA MEDLINE=21235186; PubMed=11337471;
RA Bolotin A., Wincker P., Mauer S., Jaillon O., Malarne K.,
RT Weissenbach J., Ehrlich S.D., Sorokin A.;
RT "The complete genome sequence of the lactic acid bacterium Lactococcus
RT lactis ssp. lactis Il1403.";
RT Genome Res. 11:731-753 (2001).
DR EMBL; AE006391; AA05713.1; -.
DR PIR; G86826; G86826.
DR GO; GO:0004145; F:diamine N-acetyltransferase activity; IEA.
DR GO; GO:0016740; F:transferase activity; IEA.
DR InterPro; IPR000182; GCN5acetyl_trans.
DR Pfam; PF00593; Acetyltransf_1; I.
KW Complete proteome; Transference.
SQ SEQUENCE 180 AA; 21022 MW; 6BDB148524C0DF3C CRC64;

Query Match 58.1%; Score 43; DB 2; Length 180;

```


RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahy J., Helton E., Kettman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakeley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
RA Krzywinski A.I., Skalska U., Smallus D.E., Schmerch A., Schein J.E.,
RA Jones S.J., Marra M.A.;
RA "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).
RN [2].
RP SEQUENCE FROM N.A.
RC STRAIN=Czech II;
RC TISSUE=Mammary tumor metastatized to lung. Tumor arose spontaneously;
RC Strausberg R.;
RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
DR ENBL; BC032154; AAH32154.1; -.
DR HSP; Q02410; IACQ.
DR MGD; MGI:1920407; Gulp1.
DR InterPro; IPR002086; Aldehyde dehydr.
DR InterPro; IPR011036; PH related.
DR InterPro; IPR006020; PTE_PID.
DR Pfam; PF00640; PID; 1.
DR SMART; SM00462; PTB; 1.
DR PROSITE; PS00687; ALDEHYDE_DEHYDR_GLU; UNKNOWN_1.
DR PROSITE; PS01179; PID; 1.
SQ SEQUENCE 304 AA; 34470 MW; D99154EP53EFD45 CRC64;

Query Match 58.1%; Score 43; DB 2; Length 304;
Best Local Similarity 57.1%; Pred. No. 26;
Matches 8; Conservative 3; Mismatches 3; Indels 0; Gaps

QY 2 YIKANSKFIGITEL 15
||:|:|:|:|:
DB 24 YIPYNAKFLGSTEV 37

RESULT 19
Q9CYD2 PRELIMINARY; PRT; 309 AA.
AC Q9CYD2 PRELIMINARY;
DT 01-JUN-2001 (TrEMBLrel. 17, Created)
DT 01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Mus musculus 8 days embryo whole body cDNA, RIKEN full-length enriched
DE library, clone:5730529O06 product:CED-6 PROTEIN homolog.
GN Names=Gulpi;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1].
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Whole body;
RX MEDLINE=99279253; PubMed=10349636;
RA Carninci P., Hayashizaki Y.;
RT "High-efficiency full-length cDNA cloning.";
RL Meth. Enzymol. 303:19-44 (1999).
RN [2].
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Whole body;
RX MEDLINE=21085660; PubMed=11217851;
RA RIKEN FANTOM Consortium;
RT "Functional annotation of a full-length mouse cDNA collection.";
RL Nature 409:685-690 (2001).
RN [3].
RP SEQUENCE FROM N.A.
RC STRAIN=C57BL/6J; TISSUE=Whole body;
RA The FANTOM Consortium,
RA the RIKEN Genome Exploration Research Group Phase I & II Team;
RT "Analysis of the mouse transcriptome based on functional annotation of
RT 60,770 full-length cDNAs.";
RL Nature 420:563-573 (2002).
RN [4].

OC Vibrionaceae; Photobacterium.
 OX NCBI_TaxID=74109;
 RN [1]_TaxID=74109;
 RP SEQUENCE FROM N.A.
 RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
 RA Cestaro A., Malacrida G., Simonati B., Cannata N., Bartlett D.,
 RA Valle G.;
 RT "Genome analysis of Photobacterium profundum reveals the complexity of
 RT high pressure adaptations.";
 RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
 DR EMBL; CR378677; CAG22530.1; -;
 DR InterPro; IPR002559; Transposase_11.
 DR Pfam; PF01609; Transposase_11; 1.
 KW Complete proteome; Hypothetical protein.
 SQ SEQUENCE 394 AA; 47092 MW; 5C04F26AEA21CE8 CRC64;

 Query Match 58.1%; Score 43; DB 2; Length 394;
 Best Local Similarity 56.2%; Pred. No. 34;
 Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

 QY 2 YIKANS--KFIGITEL 15
 Db 201 FIKANSKPKYVGFTQL 216

 RESULT 23
 CAG22530
 ID CAG22530 PRELIMINARY; PRT; 394 AA.
 AC CAG22530;
 DT 10-MAY-2004 (TrEMBLrel. 27, Created)
 DT 10-MAY-2004 (TrEMBLrel. 27, Last sequence update)
 DT 10-MAY-2004 (TrEMBLrel. 27, Last annotation update)
 DE Hypothetical transposase.
 GN TNPOR PBPRB0657.
 OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
 OC Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
 OC Vibrionaceae; Photobacterium.
 OX NCBI_TaxID=74109;
 RN [1]_TaxID=74109;
 RP SEQUENCE FROM N.A.
 RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
 RA Cestaro A., Malacrida G., Simonati B., Cannata N., Bartlett D.,
 RA Valle G.;
 RT "Genome Analysis of Photobacterium profundum reveals the complexity of
 RT high pressure adaptations.";
 RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
 DR EMBL; CR378677; CAG22530.1; -;
 DR InterPro; IPR002559; Transposase_11.
 DR Pfam; PF01609; Transposase_11; 1.
 KW Hypothetical protein.
 SQ SEQUENCE 394 AA; 47092 MW; 5C04F26AEA21CE8 CRC64;

 Query Match 58.1%; Score 43; DB 2; Length 394;
 Best Local Similarity 56.2%; Pred. No. 34;
 Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

 QY 2 YIKANS--KFIGITEL 15
 Db 201 FIKANSKPKYVGFTQL 216

 RESULT 24
 Q6LGL2
 ID Q6LGL2 PRELIMINARY; PRT; 395 AA.
 AC Q6LGL2;
 DT 05-JUL-2004 (TrEMBLrel. 27, Created)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
 DE Hypothetical transposase of Tn10.

GN Name=SP2983; OrderedLocusNames=PBPRB1708;
 OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
 OC Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
 OC Vibrionaceae; Photobacterium.
 OX NCBI_TaxID=74109;
 RN [1]_TaxID=74109;
 RP SEQUENCE FROM N.A.
 RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
 RA Cestaro A., Malacrida G., Simonati B., Cannata N., Bartlett D.,
 RA Valle G.;
 RT "Genome analysis of Photobacterium profundum reveals the complexity of
 RT high pressure adaptations.";
 RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
 DR EMBL; CR378680; CAG23568.1; -;
 DR InterPro; IPR002453; Beta_tubulin.
 DR InterPro; IPR002559; Transposase_11.
 DR Pfam; PF01609; Transposase_11; 1.
 DR PROSITE; PS00228; TUBULIN_B AUTOREG; UNKNOWN_1.
 KW Complete proteome; Hypothetical protein.
 SQ SEQUENCE 395 AA; 46807 MW; F380D2F4B3C3F45C CRC64;

 Query Match 58.1%; Score 43; DB 2; Length 395;
 Best Local Similarity 56.2%; Pred. No. 34;
 Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

 QY 2 YIKANS--KFIGITEL 15
 Db 202 FIKANSKPKYVGFTQL 217

 RESULT 25
 Q6LGM3
 ID Q6LGM3 PRELIMINARY; PRT; 395 AA.
 AC Q6LGM3;
 DT 05-JUL-2004 (TrEMBLrel. 27, Created)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
 DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
 DE Hypothetical transposase of Tn10.
 GN Name=SP2983; OrderedLocusNames=PBPRB1697;
 OS Photobacterium profundum (Photobacterium sp. (strain SS9)).
 OC Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales;
 OC Vibrionaceae; Photobacterium.
 OX NCBI_TaxID=74109;
 RN [1]_TaxID=74109;
 RP SEQUENCE FROM N.A.
 RA Vezzi A., Campanaro S., D'Angelo M., Simonato F., Vitulo N., Lauro F.,
 RA Cestaro A., Malacrida G., Simonati B., Cannata N., Bartlett D.,
 RA Valle G.;
 RT "Genome analysis of Photobacterium profundum reveals the complexity of
 RT high pressure adaptations.";
 RL Submitted (MAR-2004) to the EMBL/GenBank/DBJ databases.
 DR EMBL; CR378680; CAG23557.1; -;
 DR InterPro; IPR002453; Beta_tubulin.
 DR InterPro; IPR002559; Transposase_11.
 DR Pfam; PF01609; Transposase_11; 1.
 DR PROSITE; PS00228; TUBULIN_B AUTOREG; UNKNOWN_1.
 KW Complete proteome; Hypothetical protein.
 SQ SEQUENCE 395 AA; 46793 MW; D710D720S953FCC1 CRC64;

 Query Match 58.1%; Score 43; DB 2; Length 395;
 Best Local Similarity 56.2%; Pred. No. 34;
 Matches 9; Conservative 4; Mismatches 1; Indels 2; Gaps 1;

 QY 2 YIKANS--KFIGITEL 15
 Db 202 FIKANSKPKYVGFTQL 217

Search completed: January 25, 2005, 06:06:21
 Job time : 51.5833 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 26, 2005, 07:04:37 ; Search time 93.3333 Seconds
(without alignments)
57.653 Million cell updates/sec

Title: US-09-806-703A-12

Perfect score: 74

Sequence: 1 QYIKANSKFIGITEL 15

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 segs, 358729299 residues

Total number of hits satisfying chosen parameters: 211

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%

Listing first 500 summaries

Database :

A_Geneseq_23Sep04:*

1: Geneseqp1980s:*

2: Geneseqp1990s:*

3: Geneseqp2000s:*

4: Geneseqp2001s:*

5: Geneseqp2002s:*

6: Geneseqp2003as:*

7: Geneseqp2003bs:*

8: Geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	74	100.0	15	2	AAR06310 Tetanus t
2	74	100.0	15	2	ADB87354 Cytotoxic
3	74	100.0	15	2	AAW11505 Tetanus t
4	74	100.0	15	2	AAW35506 Universal
5	74	100.0	15	2	AAW71321 Universal
6	74	100.0	15	2	AAW67033 Tetanus t
7	74	100.0	15	2	AAW67578 T-cell ep
8	74	100.0	15	2	AAW04051 T-Helper
9	74	100.0	15	2	AAW73220 Tetanus t
10	74	100.0	15	3	AAW32625 Foreign e
11	74	100.0	15	3	AAW70300 Clostridi
12	74	100.0	15	3	AAW84427 Amino aci
13	74	100.0	15	3	AAW82637 Tetanus t
14	74	100.0	15	3	AAW44763 Tetanus t
15	74	100.0	15	3	AAW45511 Tetanus p
16	74	100.0	15	4	AAE11763 Clostridi
17	74	100.0	15	4	AAW49071 Tetanus t
18	74	100.0	15	4	AAW99515 Vaccine r
19	74	100.0	15	4	AAW46172 Tetanus t
20	74	100.0	15	4	AAW69636 HER-2 B C
21	74	100.0	15	4	AAW61956 Tetanus T
22	74	100.0	15	4	AAW20143 Tetanus t
23	74	100.0	15	4	AAW85451 Wild-type
24	74	100.0	15	4	AAW85701 Amino aci
25	74	100.0	15	5	AAU97872 Tetanus t

26	74	100.0	15	5	ABG31774	Abg31774 T helper
27	74	100.0	15	6	ABG72721	Abg72721 Tetanus t
28	74	100.0	15	6	ABP72694	Abp72694 Tetanus t
29	74	100.0	15	6	ADA25169	Ada25169 C. tetani
30	74	100.0	15	6	AAO30454	AAO30454 Tetanus t
31	74	100.0	15	7	ABR82482	ABR82482 Tetanus t
32	74	100.0	15	7	ADC09976	ADC09976 Tetanus t
33	74	100.0	15	7	ADC89658	ADC89658 C. tetani
34	74	100.0	15	7	ADC81609	ADC81609 Tetanus t
35	74	100.0	15	8	ADL90086	ADL90086 Universal
36	74	100.0	15	8	ADM06894	ADM06894 Tetanus t
37	74	100.0	15	8	ADP02883	ADP02883 Tetanus t
38	74	100.0	15	8	ADP02898	ADP02898 Fusion pr
39	74	100.0	15	8	ADP02876	ADP02876 Tetanus t
40	74	100.0	15	8	ADP02885	ADP02885 Tetanus t
41	74	100.0	15	8	ADO24820	ADO24820 Tetanus t
42	74	100.0	15	8	ADP48561	ADP48561 Promiscuo
43	74	100.0	15	8	ADP76011	ADP76011 Peptide e
44	74	100.0	16	2	AAW35445	AAW35445 T-cell st
45	74	100.0	16	2	AAW29705	AAW29705 Clostridi
46	74	100.0	16	5	AAU11413	AAU11413 Tetanus t
47	74	100.0	16	5	AAU93865	AAU93865 Clostridi
48	74	100.0	16	7	ADE10941	ADE10941 Chimeric
49	74	100.0	16	7	ADK41128	ADK41128 Tetanus t
50	74	100.0	16	7	ADM39833	ADM39833 C. tetani
51	74	100.0	16	8	ADG64012	ADG64012 Recombina
52	74	100.0	16	8	AAO24402	AAO24402 HLA-A24-r
53	74	100.0	16	8	ADO43877	ADO43877 Amino aci
54	74	100.0	16	8	ADP73582	ADP73582 Clostridi
55	74	100.0	16	8	ADP90539	ADP90539 Helper pe
56	74	100.0	17	2	AAW82692	AAW82692 Helper T
57	74	100.0	17	2	AAW82573	AAW82573 Tetanus t
58	74	100.0	17	2	AAW88395	AAW88395 T-cell an
59	74	100.0	17	2	AAW05599	AAW05599 Tetanus t
60	74	100.0	17	3	AAW99274	AAW99274 HLA class
61	74	100.0	17	3	AAW580768	AAW580768 Unidentifi
62	74	100.0	17	3	AAW80056	AAW80056 Pathogen
63	74	100.0	17	3	AAW54539	AAW54539 T helper
64	74	100.0	17	4	AAW31118	AAW31118 Antigenic
65	74	100.0	17	4	AAW99516	AAW99516 Vaccine r
66	74	100.0	17	4	AAW84435	AAW84435 Amino aci
67	74	100.0	17	4	AAW30941	AAW30941 Amino aci
68	74	100.0	17	4	AAW31029	AAW31029 Antigenic
69	74	100.0	17	4	AAW62904	AAW62904 Amino aci
70	74	100.0	17	4	AAW15589	AAW15589 Peptide 5
71	74	100.0	17	6	AAW35609	AAW35609 Clostridi
72	74	100.0	17	6	ADA09238	ADA09238 Tetanus t
73	74	100.0	17	7	ADM80624	ADM80624 Human hel
74	74	100.0	17	8	ADG74074	ADG74074 Tetanus i
75	74	100.0	18	2	ADJ25950	ADJ25950 Tetanus t
76	74	100.0	18	2	AAW26607	AAW26607 HIV-deriv
77	74	100.0	18	5	ABW09794	ABW09794 Peptide T
78	74	100.0	19	3	AAW99055	AAW99055 HLA class
79	74	100.0	19	4	AAW99517	AAW99517 Vaccine r
80	74	100.0	20	8	ADH09986	ADH09986 Modified
81	74	100.0	22	4	AAW46196	AAW46196 Tetanus t
82	74	100.0	22	4	AAW46175	AAW46175 Tetanus t
83	74	100.0	22	4	AAW46178	AAW46178 Tetanus t
84	74	100.0	22	4	AAW46203	AAW46203 Human APP
85	74	100.0	22	8	ADP02903	ADP02903 Fusion pr
86	74	100.0	22	8	ADP02900	ADP02900 Fusion pr
87	74	100.0	22	8	ADP02919	ADP02919 Fusion pr
88	74	100.0	25	3	AAW92650	AAW92650 PSNpep007
89	74	100.0	25	3	AAW92652	AAW92652 PSNpep009
90	74	100.0	25	3	AAW92651	AAW92651 PSNpep008
91	74	100.0	25	4	AAW49092	AAW49092 Amyloid b
92	74	100.0	27	2	AAW62701	AAW62701 LHRH-cont
93	74	100.0	27	2	AAW82596	AAW82596 IGE CH4 r
94	74	100.0	27	4	AAW49074	AAW49074 Amyloid b
95	74	100.0	27	4	AAW49077	AAW49077 Amyloid b
96	74	100.0	27	7	ADW89947	ADW89947 LHRH pept
97	74	100.0	27	8	ADJ56906	ADJ56906 Human LHR
98	74	100.0	28	5	AAU11422	AAU11422 Synthetic

99	74	100.0	29	2	AAR83561	Aar83561 IgE CH4 r	172	74	100.0	285	6	AAO30457
100	74	100.0	30	2	AAR44398	Aar44398 HIV anti-g	173	74	100.0	285	6	AAO30458
101	74	100.0	31	2	AAV82632	Aay82632 Tetanus t	174	74	100.0	287	6	AAO30459
102	74	100.0	31	5	AAU11426	Aau11426 Synthetic	175	74	100.0	287	6	AAO30460
103	74	100.0	32	3	AAV82636	Aay82636 Tetanus t	176	74	100.0	350	3	AAO30460
104	74	100.0	36	8	ADP02886	Adp02886 Tetanus t	177	74	100.0	514	6	AAO30491
105	74	100.0	37	2	AAR65389	Aar65389 Universal	178	74	100.0	514	6	AAO30490
106	74	100.0	37	2	AAV85383	Aar55383 Universal	179	74	100.0	514	6	AAO30490
107	74	100.0	43	4	AAAB49076	Aab49076 Amyloid b	180	74	100.0	517	6	AAO30492
108	74	100.0	43	4	AAAB46177	Aab46177 Tetanus t	181	74	100.0	537	1	ABR82481
109	74	100.0	43	8	ADP02902	Adp02902 Fusion pr	182	74	100.0	573	1	ABR82481
110	74	100.0	44	4	AAAB49090	Aab49090 Amyloid b	183	74	100.0	693	3	AAV92649
111	74	100.0	44	4	AAAB46194	Aab46194 Tetanus t	184	74	100.0	693	3	AAV92647
112	74	100.0	44	8	ADP02917	Adp02917 Fusion pr	185	74	100.0	708	7	ABR82479
113	74	100.0	46	5	AAU11430	Aau11430 Synthetic	186	74	100.0	713	7	ABR82480
114	74	100.0	47	2	AAV826723	Aay826723 LHRH-cont	187	74	100.0	717	7	ABR82478
115	74	100.0	50	2	AAW06131	Aaw06131 Anti-chole	188	74	100.0	750	3	AAV92637
116	74	100.0	51	4	AAAB49091	Aab49091 Amyloid b	189	74	100.0	750	3	AAV92639
117	74	100.0	51	4	AAAB46195	Aab46195 Tetanus t	190	74	100.0	750	3	AAV92628
118	74	100.0	51	8	AD157373	Adi57373 Synthetic	191	74	100.0	750	3	AAV92631
119	74	100.0	51	8	ADP02918	Adp02918 Fusion pr	192	74	100.0	750	3	AAV92645
120	74	100.0	54	8	ADJ90093	Adl90093 Anti-mela	193	74	100.0	750	3	AAV92627
121	74	100.0	56	8	ADP02916	Adp02916 Fusion pr	194	74	100.0	750	3	AAV92632
122	74	100.0	64	8	ADM06902	Adm06902 Mature ra	195	74	100.0	750	3	AAV92638
123	74	100.0	68	8	ADM06904	Adm06904 Mature gh	196	74	100.0	750	3	AAV92640
124	74	100.0	68	8	ADM06903	Adm06903 Mature gh	197	74	100.0	750	3	AAV92630
125	74	100.0	72	4	AAAB46190	Aab46190 Tetanus t	198	74	100.0	750	3	AAV92633
126	74	100.0	74	8	ADP02897	Adp02897 Fusion pr	199	74	100.0	750	3	AAV92646
127	74	100.0	79	8	ADP02915	Adp02915 Fusion pr	200	74	100.0	750	3	AAV92634
128	74	100.0	101	8	ADP02896	Adp02896 Fusion pr	201	74	100.0	750	3	AAV92635
129	74	100.0	109	4	AAAB20147	Aab20147 Growth di	202	74	100.0	750	3	AAV92643
130	74	100.0	109	4	AAAB20146	Aab20146 Growth di	203	74	100.0	750	3	AAV92636
131	74	100.0	109	4	AAAB20145	Aab20145 Growth di	204	74	100.0	750	3	AAV92641
132	74	100.0	116	3	AAAB45502	Aab45502 Modified	205	74	100.0	750	3	AAV92644
133	74	100.0	116	3	AAAB45526	Aab45526 Modified	206	74	100.0	872	8	ADL90427
134	74	100.0	118	3	AAAB45491	Aab45491 Modified	207	74	100.0	875	8	ADL90085
135	74	100.0	118	3	AAAB45518	Aab45518 Modified	208	74	100.0	879	8	ADL90425
136	74	100.0	122	3	AAAB45527	Aab45527 Modified	209	74	100.0	887	8	ADL90429
137	74	100.0	122	3	AAAB45503	Aab45503 Modified	210	74	100.0	1315	4	ADL90423
138	74	100.0	122	3	AAAB45504	Aab45504 Modified	211	74	100.0	1315	8	ADL90423
139	74	100.0	124	3	AAAB45519	Aab45519 Modified						
140	74	100.0	124	3	AAAB45523	Aab45523 Modified						
141	74	100.0	124	3	AAAB45492	Aab45492 Modified						
142	74	100.0	124	3	AAAB45505	Aab45505 Modified						
143	74	100.0	124	3	AAAB45501	Aab45501 Modified						
144	74	100.0	124	3	AAAB45493	Aab45493 Modified						
145	74	100.0	124	3	AAAB45517	Aab45517 Modified						
146	74	100.0	126	3	AAAB45490	Aab45490 Modified						
147	74	100.0	126	3	AAAB45494	Aab45494 Modified						
148	74	100.0	126	3	AAAB45514	Aab45514 Modified						
149	74	100.0	136	4	AAAB49089	Aab49089 Amyloid b						
150	74	100.0	137	3	AAV82634	Aay82634 Tetanus t						
151	74	100.0	139	3	AAAB45510	Aab45510 Modified						
152	74	100.0	141	3	AAAB45499	Aab45499 Modified						
153	74	100.0	145	3	AAAB45530	Aab45530 Modified						
154	74	100.0	147	3	AAAB45522	Aab45522 Modified						
155	74	100.0	158	2	AAW81331	Aaw81331 TNF2-7, a						
156	74	100.0	158	2	AAW81328	Aaw81328 TNF2-3, a						
157	74	100.0	158	2	AAW81329	Aaw81329 TNF2-4, a						
158	74	100.0	158	2	AAW81330	Aaw81330 TNF2-5, a						
159	74	100.0	158	2	AAW81332	Aaw81332 TNF2-1, a						
160	74	100.0	158	5	ABR07277	Abb07277 Human TNF						
161	74	100.0	158	5	ABR07281	Abb07281 Human TNF						
162	74	100.0	158	5	ABR07276	Abb07276 Human TNF						
163	74	100.0	158	5	ABR07275	Abb07275 Human TNF						
164	74	100.0	158	5	ABR07280	Abb07280 Human TNF						
165	74	100.0	160	4	AAAB20153	Aab20153 Growth di						
166	74	100.0	173	3	AAV84425	Aay84425 DNA encod						
167	74	100.0	182	3	AAV84424	Aay84424 An osteop						
168	74	100.0	194	6	AAO30489	Aao30489 Human TNF						
169	74	100.0	216	6	AAO30488	Aao30488 Human TNF						
170	74	100.0	216	3	AAV92665	Aay92665 MUC-1 ana						
171	74	100.0	254	4	AAAB20152	Aab20152 Growth di						

ALIGNMENTS

RESULT 1

AAR06310

ID AAR06310 standard; protein; 15 AA.

XX AAR06310;

XX AC

DT 04-DEC-1990 (first entry)

DE Tetanus toxin epitope.

XX Tetanus toxin; vaccine; major histocompatibility complex; MHC;

XX antimalarial.

XX Synthetic.

XX EP378881-A.

XX 25-JUL-1990.

XX 27-DEC-1989; 89EP-00203318.

XX 17-JAN-1989; 89IT-00019110.

XX 16-NOV-1989; 89IT-00022409.

XX (ENTE) ENIRICERCH SPA.

XX Pessi A, Bianchi E, Verdini AS, Corradin G;

XX

DR WPI; 1990-225582/30.
 XX Synthetic peptide(s) corresp. to tetanus toxin epitope(s) - used as
 PT universal carriers for prepn. of immunogenic conjugate(s) for use as
 PT vaccines.
 XX
 PS Claim 1; Page 17; 20pp; English.
 XX
 CC Epitopic peptides may be used with synthetic hapten derived from a
 CC pathogen to generate an immune response to the pathogen. Peptides are
 CC recognised by numerous T-helper cell clones within the context of a wide
 CC range of alleles of the human MHC. The peptides may be used in an
 CC antimalarial vaccine inducing Ab. response to P.falciparum
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 2
 ADB87354
 ID ADB87354 standard; peptide; 15 AA.
 AC
 XX ADB87354;
 DT
 DT 04-DEC-2003 (first entry)
 XX
 DE Cytotoxic T epitope retro-partly inverso peptide TT830-844.
 XX
 XX immunoretroid; anti-immunoretroid; CONH linkage; NHCO linkage;
 KW retropeptide; retroinverse peptide; vaccine; viral; bacterial infection;
 KW autoimmune disease; neurodegenerative disease; retro-partly;
 KW inverso peptide.
 XX
 XX Unidentified.
 OS
 XX
 XX Key Location/Qualifiers
 FH Modified-site 1
 FT /note= "Modified by H"
 FT Modified-site 15
 FT /note= "Modified by OH"
 FT
 XX
 XX FR2717081-A1.
 XX
 XX 15-SEP-1995.
 XX
 XX 14-MAR-1994; 94FR-00002950.
 XX
 XX 14-MAR-1994; 94FR-00002950.
 XX
 XX (CNRS) CENT NAT RECH SCI.
 XX
 XX Guichard G, Muller S, Briand J, Regenmortel MHV;
 PI
 XX WPI; 1995-322414/42.
 DR
 XX
 XX Therapeutic and diagnostic uses of retro peptide analogues - corresp. to
 PT parent peptide chains with CONH linkages replaced by NHCO linkages, also
 PT antibodies against the peptide(s).
 XX
 XX Disclosure; Page 22; 58pp; French.
 XX
 XX This invention relates to the novel uses of 'immunoretroids' or anti-
 CC immunoretroid antibodies, where the immunoretroids are peptide analogues
 CC in which one or more (preferably all) of the CONH linkages in the chain
 CC of the corresponding parent peptides are replaced by NHCO linkages and
 CC the chirality of each amino acid residue, whether involved in NHCO

CC linkages or not, is either conserved or inverted with regards to the
 CC corresponding amino acid residue in the parent peptides. For example,
 CC 'retropeptides' or 'retroinverse peptides', provided that the
 CC immunoretroids are capable of forming complexes with the anti-
 CC immunoretroid antibodies and with antibodies directed against the parent
 CC peptides or parent proteins and/or the parent peptide enantiomers or
 CC parent protein enantiomers. The immunoretroids are used to prepare
 CC medicaments for preventing or treating pathologies associated with the
 CC presence of an exogenous or endogenous protein capable of being
 CC implicated directly or indirectly in the appearance and/or development of
 CC the pathologies. Immunoretroids can also be used to prepare vaccines for
 CC preventing pathologies associated with the presence of an exogenous or
 CC endogenous protein recognised by antibodies directed against
 CC immunoretroids. Comparisons containing immunoretroids associated with a
 CC carrier molecule capable of inducing production of antibodies against an
 CC exogenous or endogenous protein responsible for a pathology, or of
 CC inducing a cytotoxic cellular immune response are useful as vaccines.
 CC Pathologies that can be diagnosed or treated are especially viral or
 CC bacterial infections, autoimmune diseases and neurodegenerative diseases.
 CC This sequence represents a cytotoxic T epitope related retro-partly
 XX inverso peptide relating to the retropeptides of the invention.
 XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 3
 AAW11505
 ID AAW11505 standard; protein; 15 AA.
 XX
 XX AAW11505;
 AC
 XX 24-SEP-1997 (first entry)
 DT
 XX Tetanus toxoid universal Th epitope TT830.
 DE
 XX Humanised antibody; anti-Fc receptor; H22; bifunctional; bispecific;
 KW fusion protein; chimera; tetanus toxoid; helper T cell epitope;
 KW antigen presentation; ds.
 XX
 XX Clostridium tetani.
 OS
 XX WO9640789-A1.
 XX
 XX 19-DEC-1996.
 PD
 XX 07-JUN-1996; 96WO-US009988.
 PF
 XX 07-JUN-1995; 95US-00484172.
 PR
 XX (MEDA-) MEDAREX INC.
 PA
 XX Deo YM, Goldstein J, Graziano R, Somasundaram C;
 PI
 XX WPI; 1997-052242/05.
 DR
 XX N-PSDB; AAT58127.
 DR
 XX Recombinant, multi-specific anti-Fc receptor antibody molecules - also
 PT comprise an anti-target portion, used for the treatment of cancer,
 PT autoimmune disease and pathogenic infection.
 XX
 XX Example 7; Fig 24; 115pp; English.
 PS
 XX Synthetic DNA coding for the wild-type universal Th epitope from tetanus
 CC toxoid, designated TT830, was fused to the 3'-end of DNA encoding heavy
 CC chain sequences from the humanised anti-Fc gamma RI monoclonal antibody

CC H22. The resulting fusion protein was shown to be significantly more
 CC efficient in antigen presentation and T cell stimulation than the T830
 CC epitope alone. A similar fusion construct was prepared coding for a
 CC mutant, antagonistic form of the epitope (designated T833S) fused to the
 CC anti-Fc gamma RI. The Fab22-T833S is at least 100 times more effective
 CC than T833S in inhibiting T cell activation
 XX
 SQ Sequence 15 AA;

Query Match
 Best Local Similarity 100.0%; Score 74; DB 2; Length 15;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

DB 1 QYIKANSKFIGITEL 15
 |||||

RESULT 4

AAW35506
 ID AAW35506 standard; peptide; 15 AA.

AC AAW35506;

XX 25-MAR-2003 (revised)

DT 22-APR-1998 (first entry)

XX

DE Universal T-cell epitope peptide SEQ ID NO:8.

XX

KW T-cell stimulatory peptide; immunogen; non-dendritic; carrier; tumour;
 KW scaffold; inhibition; metastasis; wound healing; solid phase.

XX

OS Unidentified.

XX

PN W09738011-A1.

XX

PD 16-OCT-1997.

XX

PF 03-APR-1997; 97WO-DK000146.

XX

PR 03-APR-1996; 96DK-00000398.

XX

PA (PEPR-) PEPRESEARCH AS.

XX

PI Heegaard PMH, Jakobsen PH;

XX

DR WPI; 1997-512645/47.

XX

PT Non-dendritic peptide carrier linked to a solid phase - useful as a
 PT diagnostic agent and as a scaffold for production of chemical
 PT derivatives.

XX

PS Example 20; Page 124; 262pp; English.

XX

CC A non-dendritic peptide carrier (A) has been developed which is coupled
 CC through a linker to a solid phase, forming a complex of (A)-solid phase.
 CC where (A) comprises 10-50 amino acids capable of forming a secondary
 CC structure in a benign buffer after liberation from the solid phase, and
 CC further the (A)-solid phase complex comprises an immunogenic substance
 CC and/or an immune mediator coupled on (A). The present sequence represents
 CC a peptide used in an example from the present invention. An (A)-solid
 CC phase complex can be used as a scaffold for the production of chemical
 CC derivatives, characterised by covalently attaching molecules at
 CC attachment points. Alternatively (A) is used as a scaffold-peptide for
 CC the incorporation into an Immunostimulating Complex (Iscom) resulting an
 CC (A)-Iscom complex which is used for the chemical coupling of antigenic
 CC substances in an aqueous solution by conjugation. (A) derivatised with
 CC one or more peptides having fibronectin-, laminin- or vitronectin-like
 CC binding activities can be used for the promotion of cell-attachment to
 CC plastic surfaces, in particular to inhibit tumour growth and metastasis,
 CC and for promotion of wound healing. Also a derivatised (A) can be used
 CC for the selection of specifically-binding aptamers or as a diagnostic
 CC agent. Such diagnostic (A) molecules could be used to detect molecules

CC derived from or indicative of pregnancy or of a disease, such as an
 CC infectious, autoimmune or cancerous disease. (Updated on 25-MAR-2003 to
 CC correct PF field.)
 XX

SQ Sequence 15 AA;

Query Match
 Best Local Similarity 100.0%; Score 74; DB 2; Length 15;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

DB 1 QYIKANSKFIGITEL 15
 |||||

RESULT 5

AAW71321

ID AAW71321 standard; peptide; 15 AA.

XX

AC AAW71321;

XX

DT 26-NOV-1998 (first entry)

XX

DE Universal helper T-cell epitope P2 derived from tetanus toxin.

XX

KW Liver stage; Plasmodium; Navy Yoelii Liver Stage 3 antibody; NYLS3;
 KW hepatic and erythrocytic stage protein; PyHEP17; vaccine;

XX

KW malaria parasite; teanus toxin; P2; helper T-cell epitope.

XX

OS Synthetic.

OS

OS Clostridium tetani.

XX

PN US5814617-A.

XX

PD 29-SEP-1998.

XX

PF 07-OCT-1994; 94US-00319704.

XX

PR 07-OCT-1994; 94US-00319704.

XX

PA (USNA) US SEC OF NAVY.

XX

PI Doolan DL, Charoenvit Y, Hoffman SL, Hedstrom RC;

XX

DR WPI; 1998-541794/46.

XX

PT Vaccine for protecting mammal against infection by malaria caused by
 PT Plasmodium species - comprises a first nucleic acid encoding a first
 PT polypeptide capable of eliciting an immune reaction against an antigen
 PT expressed during the liver.

XX

PS Disclosure; Col 12; 24pp; English.

XX

CC AAW71321-22 represent universal helper T-cell epitopes derived from
 CC tetanus toxin. They are used to enhance host immune response to vaccines.
 CC The specification describes a Plasmodium yoelii liver stage 17 kDa
 CC hepatic and erythrocytic stage protein designated PyHEP17. This protein
 CC elicits a response from an Igl monoclonal antibody designated Navy Yoelii
 CC Liver Stage 3 (NYLS3). This antibody does not recognise sporozoites, but
 CC does recognise P. yoelii liver stage parasites. NYLS3 eliminates upto 90%
 CC of liver stage parasites. The specification describes a vaccine for
 CC reducing the severity or incidence of infection by a malaria parasite of
 CC the genus Plasmodium. The DNA vaccine comprises exon 1 and part of exon 2
 CC of the PyHEP17 gene
 XX

SQ Sequence 15 AA;

Query Match
 Best Local Similarity 100.0%; Score 74; DB 2; Length 15;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYIKANSKFIGITEL 15

RESULT 6

AAW67033
ID AAW67033 standard; peptide; 15 AA.

XX AC AAW67033;

XX 15-DEC-1998 (first entry)

XX Tetanus toxin fragment (residues 830-844).

XX Tetanus toxin; vaccine; antibody; carbohydrate peptide conjugate;
KW dendrimeric poly-lysine; epitope; tumour.

XX Clostridium tetani.

XX WO9843677-A1.

XX 08-OCT-1998.

XX 27-MAR-1998; 98WO-EP001922.

XX 27-MAR-1997; 97US-0041726P.

XX (INSP) INST PASTEUR.

XX Bay S, Cantacuzene D, Leclerc C, Lo-Man R;

XX WPI; 1998-557071/47.

XX Carbohydrate peptide conjugate used as vaccine - comprises carrier with
PT dendrimeric poly-lysine enabling multiple epitopes to be covalently
PT attached.

XX Disclosure; Page 13; 55pp; English.

XX The invention relates to a new carbohydrate peptide conjugate, which
CC comprises a carrier with a dendrimeric poly-lysine enabling multiple
CC epitopes to be covalently attached to it. Also claimed are: (1) an
CC antibody purified from biological fluid or cells of organisms
CC administered with the carbohydrate peptide conjugate, and (2) a diagnosis
CC kit comprising antigen-specific antibodies elicited by immunisation with
CC the carbohydrate peptide conjugate. The peptide conjugate, antibody and
CC diagnosis kit are used to provide pharmaceutical compositions and
CC vaccines against tumours. These can be used to support an immune response
CC against viral infections caused by hepatitis virus, HIV or cytomegalovirus.
CC They can be used to enhance immune responses, especially B- and T-
CC cell responses, of humans and animals against bacterial infections. The
CC carbohydrate peptide conjugate stimulates the antibody and T-cell
CC response without stimulating undesired immune responses. The composition
CC is capable of increasing the survival of tumour bearing humans and
CC animals. The present sequence corresponds to residues 830-844 of tetanus
CC toxin. The synthetic peptide corresponding to this sequence may be used
CC as an epitope in a carbohydrate peptide conjugate

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 1 QYIKANSKFIGITEL 15

RESULT 7

AAW67578
ID AAW67578 standard; peptide; 15 AA.

XX AC AAW67578;

XX

DT 02-MAR-1999 (first entry)

XX T-cell epitope peptide #4 for chimeric fimbria/T-cell epitope peptide.
DE Chimeric; non-typable Haemophilus influenzae; fimbria; T-cell epitope;
KW immunogenic composition; immune response.

XX Synthetic.

XX US5843464-A.

XX 01-DEC-1998.

XX 02-JUN-1995; 95US-00460502.

XX 02-JUN-1995; 95US-00460502.

XX (OHIS) UNIV OHIO STATE.

XX Kaumaya PTP, Bakaletz LO;

XX WPI; 1999-044514/04.

XX Synthetic chimeric fimbria peptide - useful for vaccination against non-
PT typable Haemophilus influenzae.

XX Disclosure; Col 4; 16pp; English.

XX The invention relates to the manufacture of a synthetic chimeric peptide
CC comprising a non-typable Haemophilus influenzae fimbria peptide fused via
CC a linker peptide to a T-cell epitope peptide. The chimeric peptide is
CC used in immunogenic compositions which induce an immune response against
CC non-typable Haemophilus influenzae. This sequence represents an example
CC of a T-cell epitope peptide used to generate the chimeric peptide

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 1 QYIKANSKFIGITEL 15

RESULT 8

AAV04051

ID AAV04051 standard; peptide; 15 AA.

XX AC AAV04051;

XX 04-JAN-2000 (first entry)

XX T-Helper epitope from tetanus toxoid.

XX Covalently reactive antigen analog; CRAA; catalytic antibody;
KW electrophilic reaction centre; phosphonate; boronate; vaccine;
KW transition state analog; TSA; isostere; gp120; HIV-1; T-helper; tetanus;
KW toxoid; B-T-epitope.

XX Clostridium tetani.

XX WO9948925-A1.

XX 30-SEP-1999.

XX 23-MAR-1999; 99WO-US0006325.

XX 23-MAR-1998; 98US-00046373.

XX (UYNE-) UNIV NEBRASKA.

XX Paul S, Gololobov G, Smith L;
 PI WPI; 1999-591076/50.
 DR
 XX
 CC New covalently reactive antigen analogs used for treating e.g. autoimmune
 PT diseases, lymphoproliferative disorders, cancers, microbial infections,
 PT ischemic and reperfusion injury or septic shock.
 PT
 XX Disclosure; Page 86; 158pp; English.
 PS
 XX The patent discloses new covalently reactive antigen analogs (CRAA) of
 CC formula X1-Y-E-X2, in which X1 and X2 represent peptide sequences of an
 CC epitope of a disease-associated protein, Y is a positively charged amino
 CC acid residue, preferably Lys or Arg, and E is an electrophilic reaction
 CC centre, preferably a phosphonate or boronate moiety. Depending on the
 CC identity of the epitope, the CRAA may be used to stimulate production of
 CC catalytic antibodies specific for predetermined antigens associated with
 CC particular medical disorders. They may also be used to permanently
 CC inactivate endogenously produced catalytic antibodies produced in certain
 CC autoimmune diseases as well as in certain lymphoproliferative disorders.
 CC Amongst the specifically exemplified CRAAs is one based on residues 421-
 CC 436 of a B-cell epitope of gp120 (see AAY04046) which may be used to
 CC counter HIV-1 infections. When used as an immunogen, preferably this CRAA
 CC is conjugated at its N-terminal to a T-helper epitope from tetanus
 CC toxoid. The present sequence represents the T-helper epitope and
 CC corresponds to residues 830-844 of the toxoid
 XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 Db |||||
 1 QYIKANSKFIGITEL 15

RESULT 9
 AAW73220
 ID AAW73220 standard; protein; 15 AA.
 AC
 XX AAW73220;
 XX
 DT 25-JAN-1999 (first entry)
 XX
 DE Tetanus toxoid epitope.

XX Multispecific single chain antibody; antibody H22; tumour cell; therapy;
 KW antibody-dependent cellular cytotoxicity; ADCC; HER 2/neu; infection;
 KW epidermal growth factor receptor; breast cancer; ovarian cancer.

XX Synthetic.
 XX US5837243-A.
 PN
 XX 17-NOV-1998.
 PD
 XX 07-JUN-1996; 96US-00661052.
 PF
 XX 07-JUN-1995; 95US-00484172.
 PR
 XX (MEDA-) MEDAREX INC.
 PA
 XX Somaundaram C, Graziano R, Deo YM, Goldstein J;
 PI WPI; 1999-023374/02.
 DR
 XX Specific killing of tumour cells - using a multi-specific molecule
 PT comprising an anti-Fc receptor antibody and a portion which binds to a
 PT target cell.
 PT
 XX

PS Example 7; Col 27; 57pp; English.

XX This sequence represents a tetanus toxoid epitope and is recognised by
 CC the multispecific single chain antibody designated H22. The antibody can
 CC be used in the method of the invention for inducing antibody-dependent
 CC cellular cytotoxicity (ADCC) against a tumour cell which is characterised
 CC by overexpression of HER 2/neu or epidermal growth factor receptor
 CC (EGFR), comprises contacting the tumour cell with a multispecific protein
 CC molecule (preferably a single chain antibody) comprising: (a) an anti-Fc
 CC receptor antibody or an antigen binding fragment; (b) a portion which
 CC binds to HER 2/neu; and (c) a portion which binds to EGFR. The method can
 CC be used for treating cancers especially breast cancer or ovarian cancer.
 CC The multispecific antibody can also be administered prophylactically to
 CC vaccinate a subject against infection by a target cell
 XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 2; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 Db |||||
 1 QYIKANSKFIGITEL 15

RESULT 10
 AAY92625
 ID AAY92625 standard; protein; 15 AA.
 XX
 AC AAY92625;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Foreign epitope P2.

XX Foreign epitope; P2; prostate specific membrane antigen; PSM; Her2;
 KW Heregulin 2; Fibroblast growth factor 8b; FGF8b; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

XX Clostridium tetani.

XX WO2000020027-A2.
 PN
 XX 13-APR-2000.
 PD

XX 05-OCT-1999; 99WO-DK0000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 DR N-PSDB; AAA09460.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

PS Example 1; Page 213; 220pp; English.

XX The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, human prostate
 CC specific membrane antigen (PSM), heregulin 2 (Her2) and/or fibroblast
 CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
 CC presentation by antigen producing cells (APCs) of the animals immune
 CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
 CC the PA and/or at least 1 B-cell group derived from the cell-associated PA

CC ; and (2) at least 1 first T helper cell group which is foreign to the
 CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
 CC comprising a substantial part of all known and predicted CTL and B-cell
 CC epitopes of the respective PA and including at least one foreign T helper
 CC epitope (e.g. P2 and/or P30) are also claimed. The method is used to
 CC treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively

XX SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15

RESULT 11
 AAY70300
 ID AAY70300 standard; peptide; 15 AA.

AC AAY70300;

DT 06-JUN-2000 (first entry)

DE Clostridium tetani tetanus toxoid T-cell epitope, P589.

XX Recombinant protein; CDC/NIIMALVAC-1; multivalent; malaria; vaccine;
 KW T-cell epitope; tetanus toxoid; antigenic epitope; treatment;
 KW circumsporozoite protein; CSP; sporozoite surface protein-2; SSP-2;
 KW liver stage antigen-1; LSA-1; merozoite surface protein-1; MSP-1; MSP-2;
 KW apical membrane antigen-1; AMA-1; erythrocyte binding antigen-175;
 KW EBA-175; rhoptry associated protein-1; RAP-1; gamete specific antigen;
 KW Pfg27; antiparasitic; prevention; anti-CDC/NIIMALVAC-1 antibody.

OS Clostridium tetani.

XX WO200011179-A1.

PN 02-MAR-2000.

PD 19-AUG-1999; 99WO-US018869.

PF 21-AUG-1998; 98US-0097703P.

PR (NAIM-) NAT INST IMMUNOLOGY.

PA (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Lal AA, Shi YP, Hasnain SE;

XX WPI; 2000-237654/20.

DR Novel recombinant protein as vaccine for treating malarial infection
 PT comprises antigenic peptides obtained from different stages of plasmodium
 PT falciparum life cycle.

PS Claim 2; Page 17; 52pp; English.

XX The present sequence is the tetanus toxoid T-cell epitope P589, derived
 CC from Clostridium tetani. It is used in the construction of recombinant
 CC protein CDC/NIIMALVAC-1, which is a multivalent, multistage malarial
 CC vaccine. The recombinant protein comprises, melitin signal peptide,
 CC (His)6 tag, T-cell epitope from tetanus toxoid and 21 antigenic epitopes
 CC from circumsporozoite protein (CSP), sporozoite surface protein-2 (SSP-
 CC 2), liver stage antigen-1 (LSA-1), merozoite surface protein-1 (MSP-1),
 CC MSP-2, apical membrane antigen-1 (AMA-1), erythrocyte binding antigen-175
 CC (EBA-175), rhoptry associated protein-1 (RAP-1) and gamete specific
 CC antigen, Pfg27. These epitopes were obtained at different stages of the
 CC life cycle of P. falciparum. CDC/NIIMALVAC-1 vaccine has antiparasitic
 CC activity and can be used for treatment and prevention of malarial
 CC infections. Anti-CDC/NIIMALVAC-1 antibodies can be used for detecting P.

CC falciparum in biological samples

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15

RESULT 12
 AAY84427
 ID AAY84427 standard; peptide; 15 AA.

AC AAY84427;

DT 25-JUL-2000 (first entry)

DE Amino acid sequence of the tetanus toxoid P2 epitope.

XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption; tetanus toxoid P2 epitope.

OS Clostridium tetani.

XX WO200015807-A1.

PN 23-MAR-2000.

PD 13-SEP-1999; 99WO-DK000481.

PF 15-SEP-1998; 98DK-00001164.

PR 02-OCT-1998; 98US-0102896P.

XX (MEBI-) M & B BIOTECH AS.

XX Halkier T, Haaning J;

XX WPI; 2000-271444/23.

PT In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 treat, prevent and ameliorate osteoporosis.

XX Example; Page 106; 110pp; English.

XX The present sequence represents the tetanus toxoid P2 epitope. It is used
 CC to create a fusion protein with murine osteoprotegerin ligand (OPGL).
 CC Osteoprotegerin is a secreted member of the tumour necrosis factor
 CC receptor family, which blocks osteoclastogenesis in a dose dependent
 CC manner. The OPGL protein is synthesised as a type II transmembrane
 CC protein. The murine and human OPGL polypeptides are 87% homologous. OPGL
 CC is a potent osteoclast differentiation factor when combined with CSF-1.
 CC It is not capable of inducing osteoclast differentiation in the absence
 CC of CSF-1. OPGL is also an activator of mature osteoclasts. The
 CC specification describes a method for the in vivo down-regulation of OPGL
 CC activity in an animal. The method comprises using at least one OPGL
 CC polypeptide or subsequence, and/or at least one OPGL analogue to induce
 CC an immune response in the animal. The method and OPGL polypeptide are
 CC useful for treating, preventing and ameliorating osteoporosis or other
 CC diseases or conditions characterised by excessive bone resorption

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

ID AAB45511 standard; protein; 15 AA.
 XX AAB45511;
 AC
 DT 26-FEB-2001 (first entry)
 XX Tetanus P2 epitope SEQ ID NO: 23.
 DE
 XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX Clostridium tetani.
 OS
 XX WO200065058-A1.
 PN
 XX 02-NOV-2000.
 PD
 XX 19-APR-2000; 2000WO-DK000205.
 PF
 XX 23-APR-1999; 99DK-00000552.
 PR
 XX 06-MAY-1999; 99US-0132811P.
 PA (MEBI-) M & E BIOTECH AS.
 PI Klysner S;
 XX WPI; 2000-672791/65.
 DR
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 PS Example 1; Page 137; 172pp; English.
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 3; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 16
 AAE11763
 ID AAE11763 standard; peptide; 15 AA.
 XX AAE11763;
 AC
 XX 18-DEC-2001 (first entry)
 DT
 XX Clostridium tetani P2 epitope.
 DE
 XX Amyloid protein; neuroprotective; nootropic; immunostimulant; vaccine;
 KW Alzheimer's disease; anticonvulsant; gene therapy; Pick's disease;
 KW antidiabetic; systemic amyloidosis; maturity onset diabetes; ALS;
 KW amyotrophic lateral sclerosis; Parkinson's disease; encephalopathy;
 KW Huntington's disease; fronto-temporal dementia; P2 epitope.
 XX
 OS Clostridium tetani.
 XX
 PN WO200162284-A2.
 XX

XX 30-AUG-2001.
 PD
 XX 19-FEB-2001; 2001WO-DK000113.
 PF
 XX 21-FEB-2000; 2000DK-00000265.
 PR
 XX 01-MAR-2000; 2000US-0186295P.
 XX (MEBI-) M & E BIOTECH AS.
 PA
 PI Birk P, Jensen MR, Nielsen KG;
 XX WPI; 2001-589796/66.
 DR N-PSDB; AAD18755.
 XX
 PT In vivo down-regulation of amyloid protein for the treatment of
 PT Alzheimer's, comprises presenting an amyloidogenic polypeptide or its
 PT subsequence and/or at least one analogue of the amyloidogenic polypeptide
 PT to the immune system.
 XX
 PS Example 3; Page 117; 120pp; English.
 CC The invention relates to a method for in vivo down-regulation of amyloid
 CC protein such as beta amyloid (Abeta) in an animal, including human. The
 CC method comprising presenting to the animal's immune system an
 CC immunogenically effective amount of at least one amyloidogenic protein or
 CC its subsequence and/or at least one analogue of the amyloidogenic
 CC polypeptide. The amyloidogenic protein or its subsequence, and its
 CC analogue is useful for the preparation of an immunogenic composition
 CC comprising an adjuvant for down-regulating amyloid in an animal. They are
 CC also useful in the treatment, prophylaxis or amelioration of Alzheimer's
 CC disease or other diseases characterised by amyloid deposits. They are
 CC also useful in the treatment of systemic amyloidosis, maturity onset
 CC diabetes, Parkinson's disease, Huntington's disease, fronto-temporal
 CC dementia, amyotrophic lateral sclerosis (ALS), Pick's disease and prion-
 CC related transmissible spongiform encephalopathies. They are also useful
 CC for inducing production of antibodies against an amyloidogenic
 CC polypeptide. The present sequence is Clostridium tetani P2 epitope
 CC related to the invention
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 4; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 17
 AAB49071
 ID AAB49071 standard; peptide; 15 AA.
 XX AAB49071;
 AC
 XX 27-MAR-2001 (first entry)
 DT
 XX Tetanus toxoid TT830-844 T-cell epitope, SEQ ID NO:7.
 DE
 XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeldt-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW carrier protein; universal T-cell epitope.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072876-A2.
 XX

PD 07-DEC-2000.
 XX
 PF 01-JUN-2000; 2000WO-US015239.
 XX
 PR 01-JUN-1999; 99US-0137010P.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB;
 XX
 DR WPI; 2001-070921/08.
 XX
 DR
 XX
 PT Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.
 XX
 XX Disclosure; Page 43; 140pp; English.
 XX
 CC The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TRR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeldt-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents a universal T-cell epitope which may be used as a carrier for
 CC an epitope derived from an amyloid plaque component in a composition of
 CC the invention
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 4; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 18
 AAM99515
 ID AAM99515 standard; peptide; 15 AA.
 XX
 AC AAM99515;
 XX
 DT 07-DEC-2001 (first entry)
 XX
 DE Vaccine related MHC ligand peptide SEQ ID NO:618.
 XX
 KW Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
 KW immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
 KW bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
 KW pharmaceutical; immune disorder; immune deficiency; autoimmune;
 KW hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
 KW central nervous system disease; cancer; melanoma; anti-melanoma vaccine;

KW human immunodeficiency virus.
 XX
 OS Clostridium tetani.
 XX
 PN WO200170772-A2.
 XX
 PD 27-SEP-2001.
 XX
 XX
 PF 22-MAR-2001; 2001WO-FR000872.
 XX
 PR 23-MAR-2000; 2000FR-00003711.
 XX
 PA (FABR) FABRE MEDICAMENT SA PIERRE.
 XX
 PI Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;
 XX
 DR WPI; 2001-611470/70.
 XX
 XX Stabilized pharmaceutical containing N-terminal glutamic acid or
 PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
 PT with strong acid.
 XX
 PS Claim 9; Page 136; 149pp; French.
 XX
 CC The present invention describes a pharmaceutical compound (I) that
 CC contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in
 CC the form of an addition salt with a strong, physiologically acceptable
 CC acid (II). Also described are: (a) a pharmaceutical composition
 CC containing at least one (I); (b) a vaccine containing at least one (I)
 CC where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a
 CC method for in vitro diagnosis of diseases associated with the presence of
 CC (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process
 CC for preparing (I). (I) has immunomodulator, endocrine, antiallergic,
 CC neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and
 CC cytostatic activities. (I) are useful, in human or veterinary medicine,
 CC in pharmaceutical compositions (for treating immune disorders, e.g.
 CC immune deficiency, autoimmune states, hypersensitivity, allergy, graft
 CC rejection, infection, hormonal disorders and central nervous system
 CC diseases), also, where (I) is a MHC ligand (Ia), in vaccines for
 CC treatment or prevention of: (i) viral, bacterial, parasitic or fungal
 CC infections; or (ii) of cancers. A particular application is in anti-
 CC melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases
 CC associated with interactions between MHC and (I), e.g. melanoma and human
 CC immunodeficiency virus infection. AAM9592 to AAM9592 represent peptides
 CC which can be used in pharmaceutical compounds from the present invention
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 4; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 19
 AAB46172
 ID AAB46172 standard; peptide; 15 AA.
 XX
 AC AAB46172;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid TT830-844 epitope.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW P_c receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX

CC inducing effector cell killing of tumour cells. The molecules can be used
CC to treat or prevent viral, protozoal, or fungal infections, or autoimmune
CC diseases such as immune thrombocytopenia purpura and systemic lupus
CC erythematosus. The present sequence represents a wild-type tetanus toxoid
CC epitope TT830
XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 22

AAB20143
ID AAB20143 standard; peptide; 15 AA.

XX AAB20143;

AC AAB20143;

DT 30-APR-2001 (first entry)

XX Tetanus toxin T-cell epitope P2.

XX Tetanus toxin; T-cell epitope; growth differentiation factor 8; GDF-8;
KW myostatin; down-regulation; vaccine; muscle; meat; cachexia; cardiant.
XX

OS Clostridium tetani.

XX WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.

XX 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
PT through induction of anti-GDF-8 antibody production.

XX Disclosure; Page 95; 110pp; English.

XX The present sequence is that of the promiscuous tetanus toxic T-cell
CC epitope P2. It is an object of the invention to produce a recombinant
CC therapeutic vaccine capable of effecting down-regulation of growth
CC differentiation factor 8 (GDF-8) in order to increase the muscle growth
CC rate of farm animals. Variants of GDF-8 (see AAB20143-53) are provided
CC that are capable of breaking autotolerance against autologous GDF-8.
CC These comprise the C-terminal portion of human GDF-8 in which a portion
CC of the native sequence is replaced by a T-cell epitope such as the
CC promiscuous tetanus toxin T-cell epitope P2 or P30. The high number of
CC Cys residues in the C-terminal region limits the possible sites in which
CC the T-cell epitope can be positioned without major disturbance of the
CC native 3-dimensional structure of the protein. Nucleic acids encoding the
CC GDF-8 variants can be used for genetic immunisation of the animals. Down-
CC regulation of GDF-8 activity can increase muscle mass by up to at least
CC 45% in cattle, pigs and poultry used for meat production, reducing the
CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
CC treat human diseases such as cancer cachexia where muscle atrophy is
CC pronounced and for patients suffering from acute and chronic heart
CC failure

XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 23

AAB85451
ID AAB85451 standard; peptide; 15 AA.

XX AAB85451;

XX 25-SEP-2001 (first entry)

XX Wild-type TT830 (tetanus toxin) epitope.

XX HER 2/neu; epidermal growth factor receptor; EGFR; multispecific protein;
KW Fc receptor; FcR; tumor cell; breast; cancer; sarcoma; carcinoma; HIV;
KW pathogenic; Toxoplasma gondii; candidiasis; systemic lupus; cytostatic;
KW immune thrombocytopenia purpura; immunosuppressive; antiviral;
KW antifungal; antiprotozoal; TT830; tetanus toxin.

XX Clostridium tetani.

XX US6270765-B1.

XX 07-AUG-2001.

XX 06-NOV-1998; 98US-00188082.

XX 07-JUN-1995; 95US-00484172.

XX 07-JUN-1996; 96US-00661052.

XX (MEDA-) MEDAREX INC.

XX Deo YM, Goldstein J, Graziano R, Somasundaram C;

XX WPI; 2001-475189/51.

XX N-PSDB; AAH23378.

XX Inducing killing of tumor cells which expresses HER 2/neu or epidermal
PT growth factor receptor (EGFR) by contacting the cell with multispecific
PT proteins comprising an anti-Fc receptor, -Her 2/neu or -EGFR antibody,
PT useful for treating cancer.

XX Example 7; Fig 24; 57pp; English.

XX The invention relates to a new method for inducing killing of a tumor
CC cell which expresses HER 2/neu or epidermal growth factor receptor
CC (EGFR). The method comprises contacting the tumor cell with a
CC multispecific protein comprising a component, preferably an antibody,
CC which binds to an Fc receptor (FcR), Her 2/neu or EGFR. The method is
CC useful for inducing killing of a tumor cell from breast cancer, sarcoma,
CC carcinoma, or ovarian cancer. Specific multispecific proteins can also be
CC administered to a subject to treat or prevent other diseases or
CC conditions, including pathogenic infections (e.g., viral (such as HIV)),
CC protozoan infections (such as Toxoplasma gondii), fungal infections (such
CC as candidiasis), and an autoimmune (e.g. immune thrombocytopenia
CC purpura and systemic lupus). The present sequence represents a wild-type
CC tetanus toxin TT830 epitope

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15


```

Db      1 QYIKANSKFIGITEL 15
|||||
RESULT 24
AAB85701
ID      AAB85701 standard; peptide; 15 AA.
XX
AC      AAB85701;
XX
DT      29-OCT-2001 (first entry)
XX
DE      Amino acid sequence of P2 epitope.
XX
KW      Multivalent protein; immune response; Plasmodium vivax; parasite;
KW      protozoacide; vaccine; malaria; recombinant; ViVac1; ViVac2.
XX
OS      Plasmodium vivax.
XX
PN      WO200155181-A2.
XX
PD      02-AUG-2001.
XX
PF      29-JAN-2001; 2001WO-US002937.
XX
PR      31-JAN-2000; 2000US-0179213P.
XX
PA      (USSH ) US DEPT HEALTH & HUMAN SERVICES.
XX
PI      Lal AA, Xiao L, Zhou Z;
XX
DR      WPI; 2001-514557/56.
XX
PT      New recombinant multivalent protein comprising antigenic determinants
PT      derived from more than one stage in a life cycle of Plasmodium vivax,
PT      useful as a vaccine for treating, preventing and reducing malarial
PT      infection.
XX
PS      Example 1; Page 25; 59pp; English.
XX
CC      The invention relates to recombinant multivalent proteins (I) that
CC      stimulate an immune response to Plasmodium vivax. (I) comprises antigenic
CC      determinants, fragments or conservative substitutions, derived from more
CC      than one stage in a life cycle of a Plasmodium vivax parasite. (I) is
CC      useful as a vaccine for stimulating an immune response, specifically a
CC      protective immune response that confers increased resistance to infection
CC      by Plasmodium parasites, such as P. vivax. (I) is especially useful in
CC      the treatment, prevention and reduction of malarial infection, as
CC      research or diagnostic reagents for the detection of Plasmodium species
CC      in a biological sample, and for conferring immunity against multiple
CC      stages of the malarial parasite. The antibodies produced are useful for
CC      the detection or measurement of antigenic epitopes derived from one or
CC      more stages in a life cycle of a parasite, particularly P. vivax. The
CC      vaccine comprising the recombinant proteins, is cost-effective, health-
CC      promoting intervention for controlling, preventing or treating the
CC      incidence of malaria. The present sequence represents the amino acid
CC      sequence of a P2 epitope, a component of the multivalent and multistage
CC      proteins ViVac1 and ViVac2p
XX
SQ      Sequence 15 AA;
Query Match      100.0%; Score 74; DB 4; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy      1 QYIKANSKFIGITEL 15
|||||
Db      1 QYIKANSKFIGITEL 15

RESULT 25
AAU97872
ID      AAU97872 standard; peptide; 15 AA.

```

```

XX
AC      AAU97872;
XX
DT      12-AUG-2002 (first entry)
XX
DE      Tetanus toxin P2 (tt P2) T cell epitope.
XX
KW      Outer surface lipoprotein; OspA; antibacterial; immunosuppressive;
KW      vaccine; poikilothermic fish; fin-fish; Rickettsial septicemia;
KW      Rickettsial disease; tetanus toxin P2; tt P2; T cell epitope.
XX
OS      Clostridium tetani.
XX
PN      CA2339327-A1.
XX
PD      15-MAR-2002.
XX
PF      19-MAR-2001; 2001CA-02339327.
XX
PR      15-SEP-2000; 2000US-00677374.
XX
PA      (THOR/) THORNTON J C.
PA      (KAYW/) KAY W W.
PA      (BURI/) BURIAN J.
PA      (KUZY/) KUZYSK M A.
XX
PI      Thornton JC, Kay WW, Burian J, Kuzyk MA;
XX
DR      WPI; 2002-455221/49.
DR      N-PSDB; ABK52412.
XX
PT      Inducing immunity in fin fish to Rickettsial septicemia, comprises
PT      administration of an outer surface lipoprotein (OspA) of a bacterial
PT      strain, as a vaccine.
XX
PS      Disclosure; Fig 8; 55pp; English.
XX
CC      The invention describes a method of protecting a poikilothermic fish
CC      against infection by the bacterial pathogen Piscirickettsia salmonis
CC      comprising administering either intraperitoneally, by immersion or
CC      orally, an immunogenic amount of principal antigen, the OspA (outer
CC      surface lipoprotein), its variants, non-lipidated form or antigenic
CC      peptides derived or synthesized with or without an adjuvant. The new
CC      method is used to provide an outer surface lipoprotein (OspA) of
CC      bacterial strain Piscirickettsia salmonis as a vaccine to induce immunity
CC      in fin-fish against Rickettsial septicemia and other related
CC      Rickettsial diseases caused by either a virus, bacteria or parasite.
CC      This is the amino acid sequence of a Clostridium tetani tetanus toxin P2
CC      (tt P2) T cell epitope that can be fused to the Escherichia coli codon
CC      optimised OspA creating a promiscuous T cell epitope for use in creating
CC      the vaccine described in the invention
XX
SQ      Sequence 15 AA;
Query Match      100.0%; Score 74; DB 5; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy      1 QYIKANSKFIGITEL 15
|||||
Db      1 QYIKANSKFIGITEL 15

RESULT 26
ABG31774
ID      ABG31774 standard; peptide; 15 AA.
XX
AC      ABG31774;
XX
DT      03-DEC-2002 (first entry)
XX
DE      T helper cell epitope #1.
XX

```

KW Immunogen; B-cell epitope; cytotoxic T lymphocyte; CTL; TH epitope;
 KW T helper cell epitope; virtual lymph node device.
 XX Clostridium tetani.
 XX WO20026056-A2.
 XX 29-AUG-2002.
 PD
 XX 19-FEB-2002; 2002WO-DK000112.
 XX 19-FEB-2001; 2001WO-DK000113.
 PR 20-FEB-2001; 2001US-00785215.
 PR 20-AUG-2001; 2001DK-00001231.
 PR 22-OCT-2001; 2001US-0337543P.
 XX
 XX (PHAR-) PHARMEXA AS.
 XX
 XX Nielsen KG, Koefoed P;
 XX WPI; 2002-706932/76.
 DR
 XX Novel immunogen useful for immunizing an animal, has an activated
 PT polyhydroxypolymer backbone to which is attached an antigenic determinant
 PT including a B cell epitope and another determinant including a T-helper
 PT epitope.
 XX
 XX Example 1; Page 51; 52pp; English.
 PS
 CC The invention relates to an immunogen comprising at least one first
 CC antigenic determinant that includes at least one B-cell epitope and/or at
 CC least one cytotoxic T lymphocyte (CTL) epitope, and at least one second
 CC antigenic determinant that includes a T helper cell epitope (TH epitope),
 CC where each of the first and second antigenic determinants are coupled to
 CC an activated polyhydroxypolymer carrier. The invention also relates to an
 CC immunogenic composition for raising an immune response against an antigen
 CC in a mammal, including a human. The immunogen or immunogenic composition
 CC contained in a virtual lymph node (VLN) device is useful for immunising
 CC an animal, including a human, against an antigen of choice, where the
 CC antigen shares at least one first antigenic determinant with the
 CC immunogen. This sequence represents a T helper cell epitope used in
 CC synthesis of an immunogen of the invention
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 5; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 27
 ABG72721
 ID ABG72721 standard; peptide; 15 AA.
 AC ABG72721;
 XX
 XX 14-FEB-2003 (first entry)
 DT
 XX Tetanus toxin immunogenic T epitope.
 DE
 XX Covalently reactive transition state antigen analogue; CRTSA; epitope;
 KW antigen; electrophilic covalently reactive centre; catalytic antibody;
 KW antibody; autoimmune disease; autoimmune thyroiditis; asthma;
 KW systemic lupus erythematosus; rheumatoid arthritis; Reiter's syndrome;
 KW mixed connective disease; Sjogren's syndrome; vasculitis;
 KW bird shot retinopathy; lymphoproliferative disorder; myeloma; leukaemia;
 KW lymphoma; macroglobulinaemia; vaccine; immunisation; infection;
 KW dermatological; septic shock; systemic inflammatory disease;
 KW acute respiratory distress syndrome; neoplastic disease; HIV; AIDS;

KW human immunodeficiency virus; acquired immunodeficiency syndrome; gp120;
 KW immunogenic; immunosuppressive; tetanus toxin.
 XX Clostridium tetani.
 XX WO200279223-A2.
 XX 10-OCT-2002.
 PD
 XX 01-APR-2002; 2002WO-US010116.
 XX 31-MAR-2001; 2001US-0280624P.
 PR
 XX (TEXA) UNIV TEXAS SYSTEM.
 PA
 XX Paul S, Nishiyama Y;
 PI WPI; 2003-040645/03.
 DR
 XX Novel covalently reactive transition state antigen analog useful for
 PT stimulating production of catalytic antibodies, and actively immunizing
 PT patient against particular pathogen to generate protective immunity.
 PT
 PS Disclosure; Page 20; 87pp; English.
 XX
 CC The invention discloses a covalently reactive transition state antigen
 CC analogue (CRTSA), comprising a peptide sequence of an epitope of a target
 CC protein antigen (R₁), an electrophilic covalently reactive centre
 CC bearing a partial or full negative charge (E) and an electron withdrawing
 CC or electron donating substituent (R₂), which can optionally further
 CC comprise a flanking peptide sequence. The CRTSA is useful for treating a
 CC disease state in a patient by irreversibly inhibiting the action of a
 CC catalytic antibody, which involves administering the CRTSA, which
 CC comprises an epitope recognised and irreversibly bound by the catalytic
 CC antibody. Preferably CRTSA is useful for treating an autoimmune disease,
 CC such as autoimmune thyroiditis, systemic lupus erythematosus, asthma,
 CC rheumatoid arthritis, mixed connective disease, Reiter's syndrome,
 CC Sjogren's syndrome, vasculitis or bird shot retinopathy, a
 CC lymphoproliferative disorder, such as myelomas, leukaemias, lymphomas,
 CC macroglobulinaemia etc. CRTSA is also useful for stimulating production
 CC of catalytic antibodies (vaccine), for actively, or passively, immunising
 CC a patient against e.g. a microbial infection and for selecting catalytic
 CC antibodies on the surface of phage and B cells. This technology has
 CC applications in fields of veterinary medicine, industrial and clinical
 CC research and dermatological. The catalytic antibodies are useful for
 CC preventing medical disorders such as septic shock, systemic inflammatory
 CC disease, acute respiratory distress syndrome, neoplastic disease, human
 CC immunodeficiency virus (HIV) and acquired immunodeficiency syndrome.
 CC CRTSAs preferentially stimulate the production of catalytic antibodies
 CC which provides superior protection against infection due to the presence
 CC of catalytic action against the target antigen which results in its
 CC permanent inactivation. The sequence presented is the tetanus toxin T
 CC epitope which can be placed on the N-terminal side of the B epitope (HIV-
 CC gp120 immunogenic B epitope) eliminating the need to conjugate the B
 CC epitope to a large carrier protein
 XX
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 28
 ABP72694
 ID ABP72694 standard; peptide; 15 AA.
 XX ABP72694;
 XX

DT 11-JUN-2003 (first entry)
 XX Tetanus toxoid T cell epitope P2.
 DE
 XX
 KW Tetanus toxoid; epitope; amyloid precursor protein; APP; beta amyloid;
 KW vaccine; genetic immunisation; nontropic; neuroprotective;
 KW Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2003015812-A2.
 XX
 PD 27-FEB-2003.
 XX
 XX 20-AUG-2002; 2002WO-DK000547.
 PF
 XX 20-AUG-2001; 2001DK-00001231.
 PR
 PR 22-OCT-2001; 2001US-0337543P.
 PR 16-APR-2002; 2002DK-00000558.
 PR 16-APR-2002; 2002US-0373027P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Rasmussen PB, Jensen MR, Nielsen KG, Koefoed P, Degan PD;
 PI WPI; 2003-312718/30.
 XX
 DR N-PSDB; ABZ81992.
 XX
 XX Novel analog of amyloid precursor protein or beta amyloid for treating
 PT Alzheimer's disease, has amyloid precursor protein/beta amyloid
 PT incorporating B-cell epitope of amyloid protein and foreign T-helper
 PT epitope.
 XX
 PS Disclosure; Page 120; 122pp; English.
 XX
 XX The present sequence is the protein sequence of tetanus toxoid T-cell
 CC epitope P2. The invention provides methods for compositions for
 CC combatting diseases characterised by deposition of amyloid, such as
 CC Alzheimer's disease. Immunisation is preferably effected by
 CC administration of analogues of autologous amyloid precursor protein (APP)
 CC or beta amyloid (Abeta), the analogues being capable of inducing antibody
 CC production against the autologous amyloidogenic polypeptides. Especially
 CC preferred as an immunogen is autologous Abeta which has been modified by
 CC introduction of one or a few foreign, immunodominant and promiscuous T-
 CC cell epitopes, such as tetanus toxoid P2 epitope. Genetic immunisation
 CC against APP or Abeta and vaccination using live vaccines are also
 CC provided
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 30
 ID AAO30454
 ID AAO30454 standard; peptide; 15 AA.
 AC AAO30454;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE Tetanus toxoid epitope (P2) peptide.
 XX
 XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; epitope;
 KW tetanus toxoid.
 XX
 OS Unidentified.
 XX
 XX WO2003042244-A2.
 PN
 XX
 PD 22-MAY-2003.
 XX
 XX 15-NOV-2002; 2002WO-DK000764.
 PF
 XX 16-NOV-2001; 2001DK-00001702.
 PR
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 PI WPI; 2003-449558/42.
 DR N-PSDB; AAL61290.
 DR

11-JUN-2003 (first entry)
 XX Tetanus toxoid T cell epitope P2.
 DE
 XX
 KW Tetanus toxoid; epitope; amyloid precursor protein; APP; beta amyloid;
 KW vaccine; genetic immunisation; nontropic; neuroprotective;
 KW Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2003015812-A2.
 XX
 PD 27-FEB-2003.
 XX
 XX 20-AUG-2002; 2002WO-DK000547.
 PF
 XX 20-AUG-2001; 2001DK-00001231.
 PR
 PR 22-OCT-2001; 2001US-0337543P.
 PR 16-APR-2002; 2002DK-00000558.
 PR 16-APR-2002; 2002US-0373027P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Rasmussen PB, Jensen MR, Nielsen KG, Koefoed P, Degan PD;
 PI WPI; 2003-312718/30.
 XX
 DR N-PSDB; ABZ81992.
 XX
 XX Novel analog of amyloid precursor protein or beta amyloid for treating
 PT Alzheimer's disease, has amyloid precursor protein/beta amyloid
 PT incorporating B-cell epitope of amyloid protein and foreign T-helper
 PT epitope.
 XX
 PS Disclosure; Page 120; 122pp; English.
 XX
 XX The present sequence is the protein sequence of tetanus toxoid T-cell
 CC epitope P2. The invention provides methods for compositions for
 CC combatting diseases characterised by deposition of amyloid, such as
 CC Alzheimer's disease. Immunisation is preferably effected by
 CC administration of analogues of autologous amyloid precursor protein (APP)
 CC or beta amyloid (Abeta), the analogues being capable of inducing antibody
 CC production against the autologous amyloidogenic polypeptides. Especially
 CC preferred as an immunogen is autologous Abeta which has been modified by
 CC introduction of one or a few foreign, immunodominant and promiscuous T-
 CC cell epitopes, such as tetanus toxoid P2 epitope. Genetic immunisation
 CC against APP or Abeta and vaccination using live vaccines are also
 CC provided
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 29
 ID ADA25169
 ID ADA25169 standard; peptide; 15 AA.
 AC ADA25169;
 XX
 XX 20-NOV-2003 (first entry)
 DT
 XX
 DE C. tetani T-cell epitope #3.
 XX
 XX fimbria; non-typable Haemophilus influenzae; NTHi infection;
 KW otitis media; epitope; immunogenic.
 KW Clostridium tetani.
 OS

XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX PS Example 8; Page 106; 196pp; English.
 XX CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a tetanus toxoid epitope peptide.
 CC This sequence is used to illustrate the method of the invention
 XX SQ Sequence 15 AA;
 SQ Query Match 100.0%; Score 74; DB 6; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 31
 ABR82482
 ID ABR82482 standard; peptide; 15 AA.
 AC ABR82482;
 XX 20-NOV-2003 (first entry)
 DT Tetanus toxoid P2 epitope sequence.
 DE CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; tetanus toxoid; p2; p30; antigen.
 XX Clostridium tetani.
 OS WO2003059379-A2.
 PN 24-JUL-2003.
 PD 17-JAN-2003; 2003WO-DK000031.
 PF 17-JAN-2002; 2002DK-00000082.
 PR 17-JAN-2002; 2002US-0350047P.
 XX (PHAR-) PHARMEXA AS.
 PA Klysner S, Voldborg B;
 PI WPI; 2003-587260/55.
 DR Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX Disclosure; Page 139; 140pp; English.
 XX The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a tetanus toxoid (TT)
 CC P2 epitope that can be introduced into a CEA polypeptide sequence
 XX

SQ Sequence 15 AA;
 SQ Query Match 100.0%; Score 74; DB 7; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 32
 ADC09976
 ID ADC09976 standard; peptide; 15 AA.
 AC ADC09976;
 XX 18-DEC-2003 (first entry)
 DT Tetanus toxoid TT830-844, universal T-cell epitope.
 DE BCG; T-cell; epitope; gastrointestinal; antiulcer.
 XX Clostridium tetani.
 OS WO2003072040-A2.
 PN 04-SEP-2003.
 PD 25-FEB-2003; 2003WO-US005421.
 PF 25-FEB-2002; 2002US-0360134P.
 PR 23-APR-2002; 2002US-0374501P.
 XX (ELAN-) ELAN PHARM INC.
 PA Taylor J, Yednock TA;
 PI WPI; 2003-712654/67.
 DR Preventing and/or reducing pathological inflammation by administration of
 PT an agent inhibiting alpha-4 integrin or its dimer, useful in treating
 PT multiple sclerosis, Crohn's disease, ulcerative colitis or inflammatory
 PT bowel disease.
 XX Disclosure; Page 17; 89pp; English.
 XX The present sequence is that of a universal T-cell epitope comprising
 CC amino acids 830-844 of tetanus toxoid. Universal T-cell epitopes such as
 CC this can be used as carriers of peptide agents of the invention that bind
 CC alpha-4 integrin or a dimer comprising an alpha-4 integrin subunit.
 CC Linkage to a carrier will improve the immune response to a peptide that
 CC may be too small to be immunogenic on its own. A method of chronically
 CC reducing a patient's pathological inflammation involves administration of
 CC an agent that specifically binds to an alpha-4 integrin or a dimer
 CC comprising alpha-4 integrin. The agent is administered chronically for at
 CC least 6 months, preferably at least 12 months. The administration
 CC maintains alpha-4 integrin receptor saturation to chronically suppress
 CC pathological inflammation in the patient. The pathological inflammation
 CC is caused by inflammatory disease of the gastrointestinal tract, such as
 CC Crohn's disease, ulcerative colitis or inflammatory bowel disease, or is
 CC caused by multiple sclerosis (all claimed).
 XX SQ Sequence 15 AA;
 SQ Query Match 100.0%; Score 74; DB 7; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15

RESULT 33

ADC89658
 ID ADC89658 standard; peptide; 15 AA.
 XX
 AC ADC89658;
 XX
 DT 01-JAN-2004 (first entry)
 XX
 DE C. tetani T cell epitope #3.
 XX
 KW Fimbrin; T cell epitope; vaccine; otitis media; auditory;
 KW antiinflammatory.
 XX
 OS Clostridium tetani.
 XX
 PN US2003113344-A1.
 XX
 PD 19-JUN-2003.
 XX
 PF 19-AUG-2002; 2002US-00223711.
 XX
 PR 04-SEP-1998; 98US-00148711.
 XX
 PA (BAKA/) BAKALETZ L O.
 PA (KAUM/) KAUMAYA P T P.
 XX
 PI Bakaletz LO, Kaumaya PTP;
 XX
 DR WPI; 2003-810881/76.
 XX
 PT Novel synthetic chimeric fimbrin peptide LB1 or LB2 comprising a first
 PT peptide unit, T cell epitope as second peptide unit and third linker
 PT peptide unit, useful for preventing or reducing severity of otitis media.
 XX
 PS Claim 10; SEQ ID NO 7; 15pp; English.
 XX
 XX The invention relates to a synthetic chimaeric fimbrin peptide LB1 or LB2
 CC comprises a first peptide unit derived from H. influenzae fimbrin, a
 CC second peptide unit containing a T cell epitope and a third linker,
 CC peptide which connects the first peptide to the second. The chimaeric
 CC peptide is useful for inducing an immune response in animals against non-
 CC typhable Haemophilus influenzae (NTHi) and for preventing or reducing
 CC adherence of NTHi to host cells thereby preventing or reducing the
 CC severity of otitis media. The present sequence is a clostridium tetani T
 CC cell epitope for use in the chimaeric peptides of the invention.
 XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 7; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 34

ADC81609
 ID ADC81609 standard; peptide; 15 AA.
 XX
 AC ADC81609;
 XX
 DT 01-JAN-2004 (first entry)
 XX
 DE Tetanus toxoid P2 epitope SEQ ID NO:2.
 XX
 KW pain reduction; nociceptive; nociceptor; immune response;
 KW tumour necrosis factor alpha; TNFalpha; analgesic; vaccine; pain;
 KW neuropathic pain; tetanus toxoid; epitope.
 XX
 OS Synthetic.

OS Clostridium tetani.

XX
 PN WO2003075951-A2.

XX
 PD 18-SEP-2003.

XX
 PF 11-MAR-2003; 2003WO-DK000147.

XX
 PR 11-MAR-2002; 2002DK-00000368.

XX
 PR 11-MAR-2002; 2002US-0363128P.

XX
 PA (PHAR-) PHARMEXA AS.

XX
 PI Pedersen HR, Ebert B, Pedersen LH, Rasmussen PB;

XX
 PD WPI; 2003-748335/70.

XX Reducing pain or increasing the threshold for nociception in an
 PT individual comprises administering an agent capable of inducing an active
 PT immune response that targets the individual's autologous tumor necrosis
 PT factor alpha.

XX
 PS Disclosure; SEQ ID NO 2; 120pp; English.

XX The present invention describes a method for reducing pain or increasing
 CC the threshold for nociception in an individual comprising administering
 CC an agent capable of inducing an active immune response that targets the
 CC individual's autologous tumour necrosis factor alpha (TNFalpha). The
 CC agent has analgesic activity, and can be used in a vaccine against
 CC autologous TNFalpha. The method is useful in reducing pain or increasing
 CC the threshold for nociception in an individual. The method is especially
 CC intended for reducing neuropathic pain. The present sequence represents a
 CC tetanus toxoid P2 epitope, which is given in the exemplification of the
 CC present invention.

XX
 SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 7; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 35

ADL90086
 ID ADL90086 standard; protein; 15 AA.

XX
 AC ADL90086;

XX
 DT 17-JUN-2004 (first entry)

XX
 DE Universal T helper epitope, SEQ ID 26.

XX
 KW Immune response; immunoglobulin; Ig; T helper epitope.

XX
 OS Unidentified.

XX
 PN WO2004027049-A2.

XX
 PD 01-APR-2004.

XX
 PF 18-SEP-2003; 2003WO-US030188.

XX
 PR 20-SEP-2002; 2002US-0412219P.

XX
 PR 14-MAR-2003; 2003WO-US007995.

XX
 PA (ASTR-) ASTRAL INC.

XX
 PI Bot A, Wang L, Smith D, Phillips B;

DR WPI; 2004-295415/27.
 XX Generating an immune response to an antigen, useful for generating
 PT desired T cell responses comprising administering an immunoglobulin having
 PT one peptide epitope of the antigen attached to the immunoglobulin.
 XX
 PS Disclosure; Fig 1J; 154pp; English.
 XX
 CC The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to a patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 36
 ID ADM06894
 AC ADM06894 standard; protein; 15 AA.
 XX
 AC ADM06894;
 XX
 DT 17-JUN-2004 (first entry)
 XX
 DE Tetanus toxin P2 epitope, SEQ ID NO:7.
 XX
 KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnery; vaccine; tetanus toxin; P2 epitope;
 KW T-cell epitope.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004024183-A1.
 XX
 XX 25-MAR-2004.
 XX
 XX 12-SEP-2003; 2003WO-DK000592.
 XX
 XX 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Boving TEG, Klysner S;
 PI
 XX WPI; 2004-329403/30.
 DR
 XX Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX
 PS Example 2; SEQ ID NO 7; 83pp; English.
 XX
 CC The invention relates to a method for immunising animals (including
 CC human) against autologous ghrelin. The method involves presenting
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the

CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor in
 CC related cancers. The present sequence represents the tetanus toxin P2
 CC epitope, a promiscuous T-cell epitope, which may be used in ghrelin
 CC analogues of the invention.
 XX
 SQ Sequence 15 AA;
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 37
 ID ADP02883
 AC ADP02883 standard; peptide; 15 AA.
 XX
 AC ADP02883;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 830-844 for fusion protein.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041067-A2.
 XX
 XX 21-MAY-2004.
 XX
 XX 31-OCT-2003; 2003WO-US034527.
 XX
 XX 01-NOV-2002; 2002US-0423012P.
 PR
 XX (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 XX Schenk DB, Masliah B;
 PI
 XX WPI; 2004-411388/38.
 DR
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 16; 78pp; English.
 XX
 CC The invention relates to a method of preventing (MI) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (MI) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,

CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to the tetanus toxoid
 CC peptide corresponding to amino acid 830-844 used in the method of the
 CC invention.
 XX
 XX

SQ Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 38

ADP02898
 ID ADP02898 standard; peptide; 15 AA.

XX

AC ADP02898;

XX 12-AUG-2004 (first entry)

XX Fusion protein #10 for treating neurodegenerative disorder.

XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;

KW aggregation; brain; immunogenic response; beta-amyloid;

KW Parkinson's disease.

XX Synthetic.

OS WO2004041067-A2.

PN 21-MAY-2004.

XX 31-OCT-2003; 2003WO-US034527.

XX 01-NOV-2002; 2002US-0423012P.

XX (ELAN-) ELAN PHARM INC.

PA (REGC) UNIV CALIFORNIA.

XX Schenk DB, Masliah E;

PI WPI; 2004-411388/38.

XX Preventing or treating disease such as Parkinson's disease characterized
 CC by Lewy bodies or alpha-synuclein aggregation in brain by administering
 CC agent that induces immunogenic response against alpha-synuclein and/or
 CC beta-amyloid.

PS Disclosure; SEQ ID NO 31; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 39

ADP02876

ID ADP02876 standard; peptide; 15 AA.

XX

AC ADP02876;

XX 12-AUG-2004 (first entry)

XX Tetanus toxoid amino acids 830-844.

XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;

KW aggregation; brain; immunogenic response; beta-amyloid;

KW Parkinson's disease.

XX Clostridium tetani.

OS WO2004041067-A2.

PN 21-MAY-2004.

XX 31-OCT-2003; 2003WO-US034527.

XX 01-NOV-2002; 2002US-0423012P.

XX (ELAN-) ELAN PHARM INC.

PA (REGC) UNIV CALIFORNIA.

XX Schenk DB, Masliah E;

PI WPI; 2004-411388/38.

XX Preventing or treating disease such as Parkinson's disease characterized
 CC by Lewy bodies or alpha-synuclein aggregation in brain by administering
 CC agent that induces immunogenic response against alpha-synuclein and/or
 CC beta-amyloid.

PS Disclosure; SEQ ID NO 9; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to amino acids 830-844
 CC of the tetanus toxoid protein used in the method of the invention.

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 40

ADP02885
ID ADP02885 standard; peptide; 15 AA.
XX
XX ADP02885;
AC
DT 12-AUG-2004 (first entry)
DE Tetanus toxoid amino acids 830-844 for fusion protein.
XX
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Clostridium tetani.
OS
XX WO2004041067-A2.
PN
XX 21-MAY-2004.
XX
XX 31-OCT-2003; 2003WO-US034527.
PF
XX
XX 01-NOV-2002; 2002US-0423012P.
PR
XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.
PA
XX
XX Schenk DB, Masliah E;
PI
XX WPI; 2004-411388/38.
DR

XX Preventing or treating disease such as Parkinson's disease characterized
CC by Lewy bodies or alpha-synuclein aggregation in brain by administering
CC agent that induces immunogenic response against alpha-synuclein and/or
CC beta-amyloid.
XX
XX Disclosure; SEQ ID NO 18; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to the tetanus toxoid
CC peptide corresponding to amino acid 830-844 used in the method of the
CC invention.
XX
XX Sequence 15 AA;

SQ

Query Match 100.0%; Score 74; DB 8; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFITIGTEL 15
DB 1 QYIKANSKFITIGTEL 15

RESULT 41

ADO24820
ID ADO24820 standard; peptide; 15 AA.
XX
XX ADO24820;
AC
XX
XX 12-AUG-2004 (first entry)
DT
XX Tetanus toxoid peptide #1 for carbohydrate dendrimer conjugate.

XX

KW antibacterial; virucide; fungicide; hepatotropic; anti-HIV; cytostatic;
KW vaccine; bacterial adhesion inhibitor; toxin action inhibitor;
KW carbohydrate dendrimer; immunomodulating substance; HIV; hepatitis;
KW influenza; fungal disease; cancer; carcinoma; melanoma; poliovirus.

XX Clostridium tetani.
OS

XX WO2004041310-A1.
PN

XX 21-MAY-2004.
XX

XX 07-NOV-2003; 2003WO-DK000766.
XX

XX 08-NOV-2002; 2002DK-00001724.
XX

XX (DAFO-) DANMARKS FODEVARE OG VETERINAERFORSKNING.
XX

XX Heegaard P, Boas U;
XX

XX WPI; 2004-419632/39.
XX

XX Synthesizing chemoselectively carbohydrate dendrimer conjugate having
CC carbohydrate residue and immunomodulating substance, by identifying
CC chemoselective and carbohydrate residue, and binding residues to
CC dendrimer.
XX

XX Disclosure; Page 20; 81pp; English.
XX

XX The invention relates to a method of synthesizing chemoselectively a
CC carbohydrate dendrimer (CD) conjugate having a specific structure
CC containing a functional dendrimer, a residue of a carbohydrate, and a
CC residue of an immunomodulating substance. (CD) is useful in the
CC production of antibodies, as a targeting compound, in medicine, in
CC inhibition of bacterial adhesion, inhibition of toxin action such as e.g.
CC glycosphingolipid-specific VT2 toxins and other such bacterial toxins
CC with binding activities toward cell-surface carbohydrates of the host, or
CC inhibition of carbohydrate-mediated virus entry into host cells, in
CC diagnostic assays, in assays for the detection of antibodies against E,
CC and in high-throughput screening. (CD) are useful for treating and/or
CC preventing bacterial diseases such as e.g. infection with bacteria, viral
CC diseases such as infection with HIV, hepatitis or influenza, fungal
CC diseases and certain types of cancer such as carcinomas or melanomas. The
CC method enables fast and efficient synthesis of dendrimer conjugates.
CC having a well-defined chemical structure. This sequence corresponds to a
CC tetanus toxoid peptide sequence used in the method of the invention.

XX Sequence 15 AA;

Query Match 100.0%; Score 74; DB 8; Length 15;
Best Local Similarity 100.0%; Pred. No. 9.4e-07;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFITIGTEL 15

DB 1 QYIKANSKFITIGTEL 15

RESULT 42

ADP48561
ID ADP48561 standard; peptide; 15 AA.

XX ADP48561;
AC

XX 09-SEP-2004 (first entry)
DT

XX Promiscuous T-H tetanus toxoid epitope peptide, P2.
XX

XX chimeric binding protein; immunogenic; B-cell epitope;
KW scaffold protein structure; major histocompatibility complex; MHC;

XX Class II; cytostatic; vaccine; cancer; promiscuous; tetanus toxoid;
XX epitope.

OS Clostridium tetani.
 XX WO2004052930-A2.
 XX 24-JUN-2004.
 XX 11-DEC-2003; 2003WO-DK000859.
 XX 11-DEC-2002; 2002DK-00001893.
 XX 11-DEC-2002; 2002US-0432532P.
 XX 12-FEB-2003; 2003DK-00000198.
 XX 12-FEB-2003; 2003US-0446707P.
 XX (PHAR-) PHARMEXA AS.
 XX Mouritsen S;
 XX WPI; 2004-468817/44.
 XX New chimeric binding protein comprising a B-cell epitope, a scaffold
 PT protein structure and a tolerance breaking amino acid sequence, useful in
 PT preparing a vaccine against e.g. cancer.
 XX Disclosure; SEQ ID NO 1; 61pp; English.
 XX The invention relates to a novel chimeric binding protein that is
 CC immunogenic in an animal. The chimeric binding protein binds specifically
 CC to a first receptor that binds a second receptor present in an antigen of
 CC the animal, where the chimeric binding protein has: a B-cell epitope in
 CC the form of a binding site; a scaffold protein structure, autologous in
 CC the mammal, that stabilizes the 3D conformation of the binding site; and
 CC at least one tolerance breaking amino acid sequence, which is
 CC heterologous in the animal and which binds to a major histocompatibility
 CC complex (MHC) Class II molecule in the animal. The invention further
 CC comprises: a nucleic acid fragment that encodes the chimeric binding
 CC protein; a vector carrying the nucleic acid fragment; a transformed cell
 CC carrying the vector; a composition for inducing production of antibodies
 CC against an antigen in the autologous host comprising the chimeric binding
 CC protein, nucleic acid fragment and a carrier, and down-regulating a self-
 CC antigen or a cell that displays epitopes of the self-antigen in an
 CC animal. The chimeric binding protein has cytostatic activity. The
 CC chimeric binding protein is useful in preparing a vaccine against e.g.
 CC cancer. This sequence represents a 'promiscuous' T-H tetanus toxoid
 CC epitope peptide for use in the vaccine of the invention.
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 43
 ADP76011
 ID ADP76011 standard; peptide; 15 AA.
 XX ADP76011;
 XX 09-SEP-2004 (first entry)
 XX Peptide epitope from tetanus toxoid protein.
 DE antigen specific activation; antibody producing cell;
 XX non-adherent mononuclear immune cell; T helper cell;
 KW lysosome-containing cell; differentiation.
 KW Clostridium tetani.
 OS WO2004053139-A1.
 XX

XX 24-JUN-2004.
 XX 10-DEC-2003; 2003WO-AU001655.
 XX 10-DEC-2002; 2002US-0432395P.
 XX (APOL-) APOLLO LIFE SCI PTY LTD.
 XX Chen J;
 XX WPI; 2004-487905/46.
 XX In vitro antigen specific activation of antibody producing cells
 PT comprises culturing a population of isolated, non-adherent mononuclear
 PT immune cells for a time and under conditions sufficient to induce
 PT differentiation of the cell.
 XX Claim 23; SEQ ID NO 2; 88pp; English.
 XX The invention relates to a method of in vitro antigen specific activation
 CC of antibody producing cells by culturing a population of isolated, non-
 CC adherent mononuclear immune cells, which population comprises T helper
 CC cells or its functional equivalent, where the antibody producing cells
 CC and a functionally insignificant number of lysosome-containing cells, for
 CC a time and under conditions sufficient to induce differentiation of the
 CC antibody producing cell. The method is useful for in vitro antigen
 CC specific activation of antibody producing cells. This sequence
 CC corresponds to an epitope from the tetanus toxoid protein and used in the
 CC method of the invention.
 XX Sequence 15 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 15;
 Best Local Similarity 100.0%; Pred. No. 9.4e-07;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 44
 AAW35445
 ID AAW35445 standard; peptide; 16 AA.
 XX AAW35445;
 XX 25-MAR-2003 (revised)
 DT 22-APR-1998 (first entry)
 XX T-cell stimulatory peptide SEQ ID NO:51.
 DE T-cell stimulatory peptide; immunogen; non-dendritic; carrier; tumour;
 KW scaffold; inhibition; metastasis; wound healing; solid phase.
 KW Unidentified.
 OS WO9738011-A1.
 PN 16-OCT-1997.
 XX 03-APR-1997; 97WO-DK000146.
 XX 03-APR-1996; 96DK-00000398.
 XX (PEPR-) PEPRESEARCH AS.
 XX Heegaard PMH, Jakobsen PH;
 XX WPI; 1997-512645/47.
 XX Non-dendritic peptide carrier linked to a solid phase - useful as a
 PT

PT diagnostic agent and as a scaffold for production of chemical
 PT derivatives.

PS Claim 30; Page 199; 262pp; English.

XX A non-dendritic peptide carrier (A) has been developed which is coupled
 CC through a linker to a solid phase, forming a complex of (A)-solid phase.
 CC Where (A) comprises 10-50 amino acids capable of forming a secondary
 CC structure in a benign buffer after liberation from the solid phase, and
 CC further the (A)-solid phase complex comprises an immunogenic substance
 CC and/or an immune mediator coupled on (A). The present sequence represents
 CC a specifically claimed T-cell stimulatory peptide from the present
 CC invention. An (A)-solid phase complex can be used as a scaffold for the
 CC production of chemical derivatives, characterised by covalently attaching
 CC molecules at attachment points. Alternatively (A) is used as a scaffold-
 CC peptide for the incorporation into an immunostimulating complex (iscom)
 CC resulting in an (A)-iscom complex which is used for the chemical coupling of
 CC antigenic substances in an aqueous solution by conjugation. (A)
 CC derivatised with one or more peptides having fibronectin-, laminin- or
 CC vitronectin-like binding activities can be used for the promotion of cell
 CC -attachment to plastic surfaces, in particular to inhibit tumour growth
 CC and metastasis, and for promotion of wound healing. Also a derivatised
 CC (A) can be used for the selection of specifically-binding aptamers or as
 CC a diagnostic agent. Such diagnostic- (A) molecules could be used to detect
 CC molecules derived from or indicative of pregnancy or of a disease, such
 CC as an infectious, autoimmune or cancerous disease. (Updated on 25-MAR-
 CC 2003 to correct PF field.)

XX SQ Sequence 16 AA;

Query Match 100.0%; Score 74; DB 2; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 45

AAI29705
 ID AAY29705 standard; protein; 16 AA.

AC AAY29705;

DT 08-NOV-1999 (first entry)

DE Clostridium tetani antigen tox polypeptide haptan.

KW Human hepatitis B core protein; HBC; modified; immunodominant;
 KW nucleocapsid protein; vaccine; T cell epitope.

XX Clostridium tetani.

XX WO9940934-A1.

XX 19-AUG-1999.

PF 11-FEB-1999; 99WO-US003055.

PR 12-FEB-1998; 98US-0074537P.

XX (IMMU-) IMMUNE COMPLEX CORP.

XX Birkett AJ;

XX WPI; 1999-527340/44.

XX Conjugate of hepatitis B core protein, modified to increase reactivity
 PT with haptan, used to raise antibodies against the haptan, e.g. in
 PT vaccines.

XX Example 3; Page 38; 128pp; English.

XX The present invention describes a conjugate (A) comprising a
 CC strategically modified hepatitis B core (HBC) protein (I) attached to a
 CC haptan, where (I) includes amino acids (aa) 10-140 of the wild type HBC
 CC 183 aa sequence (given in AAY29674) and additionally has an insert (II)
 CC in the region corresponding to aa's 50-100, where the insert is of 1 to
 CC about 40 aa's and contains a chemically reactive aa residue linked to the
 CC haptan. A vaccine containing (A), optionally in the form of particles, is
 CC used to induce a protective antibody response against the pathogen from
 CC which the haptan is derived, in humans or other animals. These pathogens
 CC may be bacteria, viruses, rickettsia or protozoa. Insertion of (II)
 CC overcomes the low reactivity of aa side chains in native HBC protein,
 CC increasing the reactivity with haptan and resulting in conjugates of
 CC improved immunogenicity. Modified HBC can be derivatised in the form of
 CC particles by well-defined chemical methods, and is unlikely to cause
 CC immunological side-effects. AAY29675 to AAY29735 represent polypeptide
 CC haptans used in an example from the present invention
 XX

SQ Sequence 16 AA;

Query Match 100.0%; Score 74; DB 2; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 46

AAU11413

ID AAU11413 standard; peptide; 16 AA.

AC AAU11413;

DT 12-MAR-2002 (first entry)

XX Tetanus toxoid precursor peptide, tentoxylisin.

XX Gonadotropin releasing hormone; GnRH; synthetic immunogen;

KW luteinising hormone releasing hormone; LHRH; contraceptive;

KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;

KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;

KW uterine fibroid; benign prostatic hypertrophy; prostate cancer;

KW Tetanus toxoid precursor peptide; tentoxylisin.

XX Clostridium tetani.

XX WO200185763-A2.

XX 15-NOV-2001.

XX 04-MAY-2001; 2001WO-US014363.

XX 05-MAY-2000; 2000US-0202328P.

XX (APHT-) APHTON CORP.

XX Grimes S, Michaeli D, Stevens VC;

XX WPI; 2002-049440/06.

XX Novel synthetic immunogen for inducing immune response against
 PT gonadotropin releasing hormone, comprises fusion peptide having
 PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 PT or its analog.

XX Disclosure; Page 28; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone, LHRH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and

CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is Tetanus
 CC toxoid precursor peptide, tentoxylisin, a promiscuous helper T-cell
 CC peptide epitope used in the immunogen of the invention
 CC
 XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 5; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 2 QYIKANSKFIGITEL 16
 |||||

RESULT 47
 AAU93865
 ID AAU93865 standard; peptide; 16 AA.
 AC AAU93865;

DT 02-JUL-2002 (first entry)

DE Clostridium tetani tox T cell epitope.

XX Immunogenic; hepadnavirus nucleocapsid protein; hepatitis B core; HBC;
 KW vaccine; B cell epitope; T cell epitope; immunostimulant.

XX Clostridium tetani.

OS WO200214478-A2.

XX 21-FEB-2002.

XX 16-AUG-2001; 2001WO-US041759.

XX 16-AUG-2000; 2000US-0225843P.

XX 22-AUG-2000; 2000US-0226867P.

XX 15-AUG-2001; 2001US-00930915.

XX (APOV-) APOVIA INC.

XX Birkett AJ;

XX WPI; 2002-257601/30.

XX Novel recombinant hepadnavirus nucleocapsid protein, termed as chimeric
 PT hepatitis B core protein, displays immunogenic epitopes at N-terminus,
 PT HBC immunogenic loop with linker for conjugated epitope and C-terminus.

XX Disclosure; Page 43; 289pp; English.

CC The invention relates to a recombinant hepadnavirus nucleocapsid protein,
 CC i.e. a chimeric hepatitis B core (HBC) protein (I), displaying one or
 CC more immunogenic epitopes at the N-terminus, HBC immunogenic loop (L) or
 CC C-terminus, or having a heterologous linker for a conjugated epitope in
 CC (L), and containing a Cys residue at, or near, the C-terminus that
 CC confers enhanced stability to the particles. A vaccine comprising (I) is
 CC useful for inducing an immune response in an inoculated host animal, by
 CC inoculating a host animal with the vaccine, and maintaining that
 CC inoculated animal for a time period sufficient for that animal to develop
 CC an immune response. The immunogenic particles formed using (I) are
 CC substantially free of binding to nucleic acids, and are most stable than
 CC the particle formed from otherwise identical HBC chimera that lacks the C-
 CC terminal residue or in which a C-terminal Cys is replaced by another
 CC residue. The chimera particles are most stable on storage in aqueous
 CC compositions that are particles of similar sequence that lack any C-

CC terminal Cys residues. The chimera molecule exhibits the self-assembly not
 CC exhibiting the nucleic acid binding of those native particles, and
 CC excellent B cell and T cell immunogenicities. The chimera particles are
 CC typically prepared in higher yield than similar particles that are free
 CC of a C-terminal Cys. The particles are often far more immunogenic than
 CC the similar conjugates that lack a C-terminal Cys. Immunogenicities of
 CC particles assembled from the chimera molecules are enhanced as compared to
 CC similar particles assembled from chimera molecules lacking at least one C-
 CC terminal Cys. AAU93802-AAU93997 represent immunogenic HBC particles amino
 CC acid sequences and related sequences of the invention
 CC
 XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 5; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||

RESULT 48
 ADE10941
 ID ADE10941 standard; peptide; 16 AA.
 XX
 AC ADE10941;

XX 29-JAN-2004 (first entry)

XX Chimeric hepatitis B virus related B-cell epitope seqid 175.

DE hepatotropic; virucide; antiinflammatory; chronic hepatitis; vaccine;
 KW recombinant hepatitis B core chimeric protein; HBC chimeric protein;
 KW hepatitis B infection; T-cell stimulator; B-cell epitope.

XX Clostridium tetani.

XX US2003198645-A1.

XX 23-OCT-2003.

XX 21-FEB-2003; 2003US-00372076.

XX 21-FEB-2002; 2002US-0080299.

XX 21-FEB-2002; 2002US-0082014.

XX (PAGE//) PAGE M.
 PA (FRIE//) FRIEDE M.

XX Page M, Friede M;

XX WPI; 2003-852775/79.

XX Treating chronic hepatitis B infection by administering a T cell-
 PT stimulating vaccine containing immunogenic particles having recombinant
 PT carboxy-terminal truncated hepatitis B core (HBC) chimeric protein
 PT molecules.

XX Disclosure; SEQ ID NO 175; 111pp; English.

XX The invention describes a method of treating chronic hepatitis comprising
 CC administering to a patient a T cell-stimulating amount of a vaccine
 CC comprising immunogenic particles dissolved or dispersed in a diluent,
 CC where the immunogenic particles consists of recombinant hepatitis B core
 CC (HBC) chimeric protein molecules, and maintaining the patient to induce T
 CC cells activated against HBC. The methods and compositions of the present
 CC invention are useful for treating chronic hepatitis B infection. This is
 CC the amino acid sequence of a chimeric hepatitis B virus related B-cell
 CC epitope useful for expression within the HBV chimera at the N-terminus,
 CC within the immunogenic loop and/or at the C-terminus.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 7; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYIKANSKFIGITEL 15

RESULT 49

ID ADK41128 standard; peptide; 16 AA.

XX ADK41128;

XX 06-MAY-2004 (first entry)

XX Tetanus toxin T-cell epitope.

XX immunosuppressive; neuroprotective; antirheumatic; antiarthritic;
 KW antiproliferative; antidiabetic; dermatological; antiinflammatory;
 KW antiallergic; antiasthmatic; cytostatic; anti-HIV; vaccine; cytokine;
 KW multiple sclerosis; rheumatoid polyarthritis; psoriasis;
 KW autoimmune diabetes; lupus; allergy; asthma; cancer; AIDS;
 KW immune response.

XX Clostridium tetani.

XX WO2003084979-A2.

XX 16-OCT-2003.

XX 09-APR-2003; 2003WO-FR001120.

XX 10-APR-2002; 2002FR-00004464.

XX (ZAGU/) ZAGURY J.

XX Zagury J;

XX WPI; 2003-812717/76.

XX New cytokine-derived peptide, useful as vaccine for treating conditions
 PT caused by excess cytokine, contains residues closely associated with a
 PT cytokine receptor.

XX Example 13; SEQ ID NO 55; 42pp; French.

XX The invention relates to novel peptides (I) of 5-40 amino acids (aa)
 CC derived from a cytokine in which at least one aa has at least one of its
 CC atoms spaced a distance (d), evaluated from structural data, less than 5
 CC angstroms from an atom of the corresponding cytokine receptor is new.
 CC Excluded are peptides from between the 2nd and 3rd Cys of RANTES and from
 CC residues 123-140 of interferon-alpha. (I) and their derivatives, also
 CC peptides from the 123-140 region of interferon-alpha, are useful for
 CC treatment and prevention of diseases associated with high levels of
 CC cytokines, e.g. multiple sclerosis, rheumatoid polyarthritis, psoriasis,
 CC autoimmune diabetes, lupus, allergy, asthma, cancer and AIDS. Since (I)
 CC correspond to regions very close to the receptor, production of
 CC antibodies that facilitate or potentiate cytokines is limited, and the
 CC quality of the immune response is improved by restricting the number of
 CC antigenic determinants targeted. This sequence corresponds to the tetanus
 CC toxin T-cell epitope and used in the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 7; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 2 QYIKANSKFIGITEL 16

RESULT 50

ADM39833

ID ADM39833 standard; peptide; 16 AA.

XX ADM39833;

XX 03-JUN-2004 (first entry)

XX C_tetani T-cell peptide epitope expressed by Hbc chimera Seq 165.

XX immunogenic; avian hepatitis B virus; nucleocapsid;
 KW self assembled particle; immunogen; inoculum; vaccine; immunostimulant;
 KW antibacterial; virucidal; T-cell epitope.

XX Clostridium tetani.

XX WO2003072722-A2.

XX 04-SEP-2003.

XX 21-FEB-2003; 2003WO-US005315.

XX 21-FEB-2002; 2002US-0359129P.

XX (APOV-) APOVIA INC.

XX Birkett AJ, Peck B;

XX WPI; 2003-679948/84.

XX New recombinant chimera avian hepatitis B core protein molecule, useful as
 PT an immunogen for inducing a B cell or T cell response to produce
 PT antibodies, or as a vaccine against pathogens.

XX Disclosure; SEQ ID NO 165; 278pp; English.

XX This invention relates to novel recombinant immunogenic chimeric avian
 CC hepatitis B core (AHBC) nucleocapsid proteins. Specifically, it refers to
 CC an AHBC protein that has been engineered to display an immunogenic B cell
 CC or T cell epitope, exhibit enhanced stability and an absence of nucleic
 CC acid binding as a self assembled particle. The present invention
 CC describes the chimeric AHBC protein as truncated at the C-terminus and
 CC containing introduced cysteine residues that confers an enhanced
 CC stability in aqueous solution, an increased yield and more immunogenicity
 CC than similar conjugates that lack N- or C-terminal cysteines.
 CC Furthermore, a reduction in the number of positively charged residues
 CC (lysine and arginine) towards the C-terminus prepares self-assembled
 CC particles that are substantially free of nucleic acid binding. As such,
 CC these chimeric particles can be used as immunogens of an inoculum that
 CC induce a B cell or T cell response in an animal to produce antibodies. It
 CC can also be useful for developing a vaccine to protect against the
 CC pathogen from which the heterologous epitope or the haptens is derived.
 CC Accordingly, these compositions exhibit immunostimulant, antibacterial
 CC and virucidal activities. This peptide sequence is an exemplary T-cell
 CC epitope peptide immunogen useful for both linkage to the linker residue
 CC after expression of a contemplated chimera and for expression within an
 CC HBC chimera of the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 7; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||

Db 1 QYIKANSKFIGITEL 15

RESULT 51

ADG64012
 ID ADG64012 standard; peptide; 16 AA.
 XX
 AC ADG64012;
 XX
 DT 11-MAR-2004 (first entry)
 XX
 DE Recombinant chimera hepatitis B core protein immunogenic epitope #134.
 XX
 KW Recombinant chimera hepatitis B core protein; HBC; immunogenic epitope;
 KW HBC immunodominant loop; immune response.
 XX
 OS Clostridium tetani.
 XX
 PN US2003185858-A1.
 XX
 PD 02-OCT-2003.
 XX
 PF 21-FEB-2002; 2002US-00082014.
 XX
 PR 15-AUG-2001; 2001US-00930915.
 XX
 PA (BIRK/) BIRKETT A J.
 XX
 PI Birkett AJ;
 XX
 DR WPI; 2004-031988/03.
 XX
 KW Recombinant chimera hepatitis B core protein molecule useful for preparing
 PT vaccine or inoculum includes peptide-bonded heterologous immunogenic
 PT epitope at N-terminus in the hepatitis B core immunodominant loop or C-
 PT terminus of the chimera.
 XX
 PS Disclosure; SEQ ID NO 145; 110pp; English.
 XX
 CC The invention relates to a recombinant chimera hepatitis B core (HBC)
 CC protein molecule that includes a peptide-bonded heterologous immunogenic
 CC epitope at the N-terminus in the HBC immunodominant loop or the C-
 CC terminus of the chimera, or a heterologous linker residue for a conjugated
 CC epitope present in the loop. The invention also relates to an immunogenic
 CC particle comprising the recombinant hepatitis B core chimeric protein
 CC molecules, a vaccine comprising the immunogenic particles dissolved or
 CC dispersed in a diluent, a nucleic acid that encodes a recombinant HBC
 CC protein molecule or its variant, analogue, or complement and a method for
 CC inducing an immune response in an inoculated host animal comprising
 CC inoculating a host animal with a vaccine and maintaining the inoculated
 CC animal for a period of time sufficient to enable development of an immune
 CC response. The recombinant chimera hepatitis B core protein molecule is
 CC used in an immunogenic particle for preparing a vaccine useful for
 CC inducing an immune response in an inoculated host animal. This sequence
 CC represents an HBC protein immunogenic B cell epitope of the invention.
 XX
 SQ Sequence 16 AA;
 Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db |||||
 1 QYIKANSKFIGITEL 15
 RESULT 52
 AAO24402
 ID AAO24402 standard; peptide; 16 AA.
 XX
 AC AAO24402;
 XX
 DT 06-MAY-2004 (first entry)
 XX
 DE HLA-A24-restricted cancer antigen peptide related peptide #36.
 XX

KW Human; mouse; HLA-A24-restricted cancer antigen; antigen; cancer;
 KW tumour suppressor protein; cytostatic; WTI; vaccine.
 XX
 OS Synthetic.
 XX
 PN WO2003106692-A1.
 XX
 PD 24-DEC-2003.
 XX
 PF 12-JUN-2003; 2003WO-JP007463.
 XX
 PR 12-JUN-2002; 2002JP-00171518.
 PR 20-SEP-2002; 2002JP-00275572.
 XX
 PA (CHUS) CHUGAI SEIYAKU KK.
 PA (SUMU) SUMITOMO PHARM CO LTD.
 PA (SUGI/) SUGIYAMA H.
 XX
 PI Sugiyama H, Gotoh M, Takasu H;
 XX
 DR WPI; 2004-090846/09.
 XX
 PT Antigenic peptides derived from WTI which induce HLA-A24 restricted
 PT cytotoxic T-lymphocytes for production of cancer vaccine and treatment
 PT and prevention of cancer.
 XX
 PS Disclosure; Page 98; Opp; Japanese.
 XX
 CC The present invention relates to antigenic peptides derived from tumour
 CC suppressor protein WTI which induce HLA-A24 restricted cytotoxic T-
 CC lymphocytes. The peptides can be used in the preparation of cancer
 CC vaccine for treatment and prevention of cancer, including leukaemia,
 CC multiple myeloma, lymphoma, and cancer of the stomach, colon, breast,
 CC liver, ovary, skin, pancreas, prostate and womb. The present sequence is
 CC a polypeptide used in the exemplification of the invention
 XX
 SQ Sequence 16 AA;
 Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db |||||
 2 QYIKANSKFIGITEL 16
 RESULT 53
 ADO43877
 ID ADO43877 standard; peptide; 16 AA.
 XX
 AC ADO43877;
 XX
 DT 15-JUL-2004 (first entry)
 XX
 DE Amino acid sequence of synthetic peptide #2.
 XX
 KW Human; WTI; CTL induction; cancer vaccine; stomach cancer;
 KW prostate cancer; ovarian cancer.
 XX
 OS Synthetic.
 XX
 PN WO2004026897-A1.
 XX
 PD 01-APR-2004.
 XX
 PR 19-SEP-2003; 2003WO-JP011974.
 XX
 PF 20-SEP-2002; 2002JP-00275264.
 XX
 PA (CHUS) CHUGAI SEIYAKU KK.
 PA (SUMU) SUMITOMO PHARM CO LTD.
 PA (SUGI/) SUGIYAMA H.

XX Sugiyama H, Gotoh M, Takasu H, Samizo F, Kusunose N, Nakatsuka M;
 XX WPI; 2004-295379/27.
 XX Novel WT1 substitution peptides with cysteine replaced by specific amino
 PT acid residue and their encoded polynucleotide for cancer vaccines with
 PT CTL induction activity for treatment of e.g. stomach cancer and prostate
 PT cancer.

XX Disclosure; Page 18; 65pp; Japanese.

XX The specification describes WT1 substitution peptides, in which a
 CC cysteine residue is substituted with another amino acid residue. The WT1
 CC substitution peptides have CTL induction activity. Peptides of the
 CC invention are used in cancer vaccines, which are applicable in the
 CC treatment of e.g. stomach cancer, prostate cancer and ovarian cancer. The
 CC present peptide represents a peptide that is mentioned in the
 CC specification.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 2 QYIKANSKFIGITEL 16
 |||||

RESULT 54

ADP73582
 ID ADP73582 standard; peptide; 16 AA.

XX AC ADP73582;

XX 09-SEP-2004 (first entry)

XX Clostridium tetani T cell epitope of gene tox.

XX transgenic animal; Hepatitis B virus nucleocapsid core protein; HBC;
 KW enhanced stability; hepatotropic; virucide; immunology;
 KW protein engineering; immunogen; vaccine; Hepatitis B infection.

XX Clostridium tetani.

XX WO2004053091-A2.

XX 24-JUN-2004.

XX 10-DEC-2003; 2003WO-US039164.

XX 10-DEC-2002; 2002US-0432123P.

XX (APOV-) APOVIA INC.

XX Lyons K, Birkett AJ, Haron JA;

XX WPI; 2004-468859/44.

XX New recombinant chimera hepatitis B core (HBC) protein molecules useful in
 PT the fields of immunology and protein engineering, in particular as an
 PT immunogen in a vaccine for Hepatitis B infections.

XX Disclosure; SEQ ID NO 195; 338pp; English.

XX The invention relates to a novel recombinant chimeric Hepatitis B virus
 CC nucleocapsid (core) protein (HBC), up to 600 or 380 amino acid residues
 CC in length. The chimeric protein is engineered for both enhanced stability
 CC of self-assembled particles and the substantial absence of nucleic acid
 CC binding by the particles. The invention further comprises: a recombinant
 CC HBC protein chimeric molecule that has a length of 135-365 amino acid

CC residues and contains four peptide-linked amino acid residue sequence
 CC domains from the N-terminus that are denominated Domains I, II, III and
 CC IV. The invention also provides nucleic acids, polypeptides, host cells,
 CC vectors and transgenic animals used in the methods of the invention. The
 CC chimeric compositions of the invention have hepatotropic and virucide
 CC activities. The methods and compositions of the present invention are
 CC useful in the fields of immunology and protein engineering, in particular
 CC for using a chimeric hepatitis B virus nucleocapsid protein as an
 CC immunogen in a vaccine for Hepatitis B infections. This sequence
 CC represents a Hepatitis B virus nucleocapsid (core) protein related
 CC polypeptide of the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 |||||

RESULT 55

ADP90539
 ID ADP90539 standard; peptide; 16 AA.

XX AC ADP90539;

XX 23-SEP-2004 (first entry)

XX DE Helper peptide related to the SS393 peptide SeqID 8.

XX SYT-SSX; SS393; tumour antigen peptide; cancer vaccine;
 KW cytotoxic lymphocyte induction; synovial sarcoma; tumour; cytostatic;
 KW helper peptide.

XX Synthetic.

XX JP2004180566-A.

XX 02-JUL-2004.

XX 03-DEC-2002; 2002JP-00350633.

XX 03-DEC-2002; 2002JP-00350633.

XX (SATO/) SATO N.

XX (SUMU) SUMITOMO SEIYAKU KK.

XX WPI; 2004-472266/45.

XX Novel mutant peptide of SYT-SSX origin, useful as pharmaceutical
 PT composition of cancer vaccine for inducing cytotoxic T cells, and as
 PT diagnostic of tumor.

XX Disclosure; SEQ ID NO 8; 28pp; Japanese.

XX This invention relates to novel mutant peptides derived from SYT-SSX.
 CC Specifically, it refers to a peptide SS393, which is a modified tumour
 CC antigen peptide that can be used as the active ingredient in a cancer
 CC vaccine. The present invention describes the development of mutant
 CC peptides that exhibit increased binding affinity to the HLA-A24 antigen,
 CC and as such have a favourable cytotoxic lymphocyte (CTL) induction
 CC activity. Accordingly, these peptide epitopes can be used to treat
 CC patients suffering from various tumours including synovial sarcoma, and
 CC furthermore they exhibit cytostatic activities. This peptide sequence is
 CC a helper peptide related to the SS393 peptide of the invention.

XX Sequence 16 AA;

Query Match 100.0%; Score 74; DB 8; Length 16;
 Best Local Similarity 100.0%; Pred. No. 1e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 2 QYIKANSKFIGITEL 16

RESULT 56
 AAR62692
 ID AAR62692 standard; peptide; 17 AA.
 XX AAR62692;
 XX 25-MAR-2003 (revised)
 DT 10-SEP-1995 (first entry)
 XX
 DE Helper T cell epitope for use in universal immune stimulator.
 XX
 KW Helper T cell epitope; universal immune stimulator; invasin; haptens;
 KW vaccine; tetanus toxin.
 XX
 OS Clostridium tetani.
 XX
 XX WO9425060-A1.
 PN
 XX
 PD 10-NOV-1994.
 XX
 XX 28-APR-1994; 94WO-US004832.
 XX
 PR 27-APR-1993; 93US-00057166.
 PR 14-APR-1994; 94US-00229275.
 XX
 XX (LADD/) LADD A E.
 PA (WANG/) WANG C Y.
 PA (ZAMB/) ZAMB T.
 XX
 XX Ladd AE, Wang CY, Zamb T;
 XX WPI; 1994-357910/44.
 XX
 PT Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.
 XX
 PS Claim 7; Page 25; 213pp; English.
 XX
 CC Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasin protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC hapten is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence represents a
 CC tetanus toxin helper T cell epitope which can be used as Th in the immune
 CC stimulator. (Updated on 25-MAR-2003 to correct PN field.)
 XX
 XX Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 3 QYIKANSKFIGITEL 17

RESULT 57
 AAR82573

ID AAR82573 standard; peptide; 17 AA.
 XX
 AC AAR82573;
 XX
 DT 13-JUN-1996 (first entry)
 XX
 DE Tetanus toxin helper T cell epitope, TT1.
 XX
 KW IgE; CH4; immunoglobulin; epsilon; immunogen; helper T cell; epitope;
 KW vaccine; allergy; antibody; constant heavy chain.
 XX
 OS Clostridium tetani.
 XX
 XX WO9526365-A1.
 PN
 XX
 PD 05-OCT-1995.
 XX
 XX 24-MAR-1995; 95WO-US003741.
 PF
 XX 28-MAR-1994; 94US-00218461.
 PR
 PR 25-OCT-1994; 94US-00328912.
 XX
 XX (UNBI-) UNITED BIOMEDICAL INC.
 PA
 XX Wang CY;
 PI
 XX WPI; 1995-351297/45.
 DR
 XX Synthetic peptide-based immunogen contg. IgE CH4 peptide and helper T
 PT cell epitope - useful for eliciting antibody prodn. for allergy
 PT treatment.
 PT
 XX Claim 3; Page 59; 87pp; English.
 PS
 XX AAR82571-91 are helper T cell epitopes which can be used in the
 CC preparation of a peptide immunogen that is useful in vaccines for
 CC treating allergic reactions. In the immunogen an IgE CH4 peptide is
 CC attached C-terminally to a series of amino acids including a helper T
 CC cell epitope. The immunogen may also opt. contain a fatty acid or fatty
 CC acid derivative, an invasin domain or alpha-NH2. The immunogen produces
 CC high titres of antibodies to the effector site in human IgE heavy chain
 CC (the CH4 domain peptide) which inhibit mast cell activation and reduce
 CC allergen-induced IgE prodn. The immunogens may be used in either a
 CC radially branching multimeric form or a linearly arranged monomeric form
 XX
 XX Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 3 QYIKANSKFIGITEL 17

RESULT 58
 AAR88395
 ID AAR88395 standard; peptide; 17 AA.
 XX
 AC AAR88395;
 XX
 DT 12-JUN-1996 (first entry)
 XX
 DE T-cell antigen TT2 peptide.
 XX
 KW T-antigen; vaccine; antibody; T-cell; T-lymphocyte; alpha-helix;
 KW coiled-coil heterodimer; core peptide; subunit.
 XX
 OS Synthetic.
 XX
 XX WO9531480-A1.
 PN
 XX

PD 23-NOV-1995.
 XX
 PF 18-MAY-1995; 95WO-CA000293.
 XX
 PR 18-MAY-1994; 94US-00245507.
 XX
 PA (SPIS-) SPI SYNTHETIC PEPTIDES INC.
 XX
 PI Houston ME, Zhou NE, Kay CM, Hodges RS, Cachia PJ, Irvin RT;
 XX
 XX WPI; 1996-010880/01.
 XX
 XX Hetero: dimeric polypeptide immunogen in coiled-coil configuration with
 PT different antigens on each sub:unit - useful in vaccines and for antibody
 PT prodn.
 XX
 XX Claim 7; Page 61; 95pp; English.
 XX
 CC This T-cell antigen TT2 peptide may be attached to a core peptide
 CC contained in one of the 2 subunits of an alpha-helical coiled-coil
 CC heterodimer. Each core peptide is comprised of terminal and internal AA
 CC repeat sequences. This peptide antigen is attached to the core peptide
 CC through covalent linkages to certain AA of the internal repeats. The 2
 CC subunits of the heterodimer are arranged in a stable alpha-helical coiled
 CC -coil configuration having a 1:1 stoichiometry, and the peptide antigen
 CC is disposed toward the outer surfaces of the configuration. The
 CC heterodimer may be used as a synthetic vaccine (optionally multivalent)
 CC or to generate antibodies
 CC
 XX Sequence 17 AA;
 SQ
 Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 59
 AAW05599
 ID AAW05599 standard; peptide; 17 AA.
 XX
 AC AAW05599;
 XX
 DT 10-DEC-1996 (first entry)
 XX
 XX Tetanus toxin helper T cell epitope #1.
 XX
 KW Immunoglobulin; IGE; membrane protein; human; epsilon chain; hepatitis B;
 KW membrane anchoring domain; helper T cell; surface antigen; core antigen;
 KW pertussis toxin; tetanus toxin; measles virus F protein; immunotherapy;
 KW Chlamydia trachomatis major outer membrane protein; immunogen; vaccine;
 KW diphtheria toxin; plasmidium falciparum; circumsporozoite; E. coli Trat;
 KW schistosoma mansoni; triose phosphate isomerase; allergenic reaction;
 KW allergic rhinitis; food allergy; anaphylaxis; virally-induced asthma;
 KW antihistamine; decongestant; beta-2 agonist; immunosuppression;
 KW corticosteroid.
 XX
 OS Synthetic.
 XX
 PN WO9612740-A1.
 XX
 PD 02-MAY-1996.
 XX
 PF 25-OCT-1995; 95WO-US013841.
 XX
 PR 25-OCT-1994; 94US-00328519.
 XX
 PA (UNBI-) UNITED BIOMEDICAL INC.
 XX
 PI Wang CY, Walfield AM;

XX WPI; 1996-230555/23.
 DR
 XX
 PT Peptide immunogen useful in treatment of allergy - comprises membrane-
 PT bound IGE epsilon-chain peptide synthesised linearly in tandem with T
 PT helper epitope peptide.
 XX
 XX Claim 2; Page 18; 53pp; English.
 PS
 XX AAW05957-W05616 represent helper T cell epitopes used in the peptide
 CC immunogens of the invention. This sequence represents the tetanus toxin
 CC helper T cell antigen. The peptides of the invention contain one of these
 CC sequences, and a membrane-bound immunoglobulin E (IGE) fragment (see
 CC AAW05595 and AAW05596). The peptide immunogens of the invention can be
 CC used in vaccines for the immunotherapeutic treatment of allergenic
 CC reactions, including allergic rhinitis, food allergies, anaphylaxis, or
 CC virally-induced asthma. The immunogens overcome the short effective
 CC period of antihistamines, decongestants, and beta-2 agonists, while
 CC preventing the broad immunosuppression of corticosteroids. The peptides
 CC do not have the potential side effects of restlessness or sedation
 CC (associated with antihistamines), associated increased morbidity in
 CC asthmatics (as seen with beta-2 agonists) and adverse hormonal activities
 CC (observed in corticosteroid users)
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 2; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 3 QYIKANSKFIGITEL 17
 RESULT 60
 AAY99274
 ID AAY99274 standard; peptide; 17 AA.
 XX
 AC AAY99274;
 XX
 DT 07-AUG-2000 (first entry)
 XX
 DE HLA class II binding antigen epitope peptide #463.
 XX
 KW Human leucocyte antigen; HLA class II; antigen epitope; pharmaceutical;
 KW immune response; chronic viral disease; cancer; autoimmune disease;
 KW rheumatoid arthritis; multiple sclerosis; myasthenia gravis; AIDS;
 KW allograft rejection; allergy; Lyme disease; hepatitis; prostate cancer;
 KW glomerulonephritis; food hypersensitivity; malaria.
 XX
 OS Unidentified.
 XX
 PN WO9961916-A1.
 XX
 PD 02-DEC-1999.
 XX
 XX 28-MAY-1999; 99WO-US012066.
 XX
 PR 29-MAY-1998; 98US-0087192P.
 XX
 PA (EPIM-) EPIMUNE INC.
 XX
 PI Sette A, Southwood S, Sidney J;
 XX
 DR WPI; 2000-097143/08.
 XX
 PT New compositions containing immunogenic peptide epitopes for various HLA
 PT class II DR molecules useful for inducing helper T cell response.
 XX
 PS Claim 1; Page 47; 60pp; English.
 XX
 CC The present invention relates to a new pharmaceutical composition

comprising a unit dose form of a peptide, or analogue, comprising an epitope selected from those represented by peptides AAY8812-Y99339 which are derived from various antigens for various human leucocyte antigen class DR molecules, representative of the world wide population. The peptide/analogue binds to an HLA class II molecule at an IC-50 of less than or equal to 1,000 nM. The pharmaceutical can be used to induce a helper T cell response. The pharmaceutical focuses the immune response towards selected determinants and could therefore be used in cases of chronic viral diseases and cancer. Examples of diseases that can be treated using the peptide containing pharmaceutical include autoimmune diseases (rheumatoid arthritis, multiple sclerosis, and myasthenia gravis), allograft rejection, allergies, Lyme disease, hepatitis, post-streptococcal endocarditis or glomerulonephritis and food hypersensitivities. The peptide epitopes can be used to enhance immune responses against other immunogens administered with the peptides. Diseases which can be treated using immunogenic mixtures include prostate cancer, hepatitis B, hepatitis C, AIDS, renal carcinoma, cervical carcinoma, lymphoma, and condyloma acuminatum. The peptides may also be used to make monoclonal antibodies useful as potential diagnostic or therapeutic agents. The peptides may also be useful as diagnostic reagents, for example, to determine the susceptibility of an individual to a treatment regimen. Also, the peptides may be used to predict which individuals will be at substantial risk of developing chronic infection. The selection of appropriate T and B cell epitopes should allow the development of epitope based vaccines particularly towards conserved epitopes of pathogens which are characterized by high sequence variability such as HIV, HCV and Malaria

Sequence 17 AA;

Query Match 100.0%; Score 74; DB 3; Length 17;
Best Local Similarity 100.0%; Pred. No. 1.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 1 QYIKANSKFIGITEL 15

RESULT 61

AAY58768
ID AAY58768 standard; peptide; 17 AA.

AC AAY58768;

DT 25-APR-2000 (first entry)

XX Unidentified peptide.

DE Helper T cell; Th epitope; feed additive; growth promotion; somatostatin.

XX Unidentified.

OS WO9966950-A1.

PN 29-DEC-1999.

XX 21-JUN-1999; 99WO-US013923.

XX 20-JUN-1998; 98US-00100415.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY;

XX WPI; 2000-160560/14.

XX New somatostatin helper T-cell epitope conjugate for raising anti-somatostatin antibodies to enhance growth rate in animal by reducing growth inhibitory activity of somatostatin.

XX Disclosure; Page 50-51; 59pp; English.

CC The present sequence is that of an unidentified peptide of the invention.
CC The invention relates to peptide compositions (see AAY58739-66) useful as immunogens for growth promotion in farm animals. The immunogenic peptides contain helper T cell epitopes which comprise multiple class II MHC motifs and have somatostatin at either the C- or N-terminus. They may also include an invasin domain which acts as a general immune stimulator. The helper T cell epitopes and the invasin domain enhance the immune response against the somatostatin self-peptide

Sequence 17 AA;

Query Match 100.0%; Score 74; DB 3; Length 17;
Best Local Similarity 100.0%; Pred. No. 1.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
DB 3 QYIKANSKFIGITEL 17

RESULT 62

AAY80056
ID AAY80056 standard; peptide; 17 AA.

AC AAY80056;

DT 15-MAY-2000 (first entry)

XX Pathogen derived Th epitope SEQ ID NO:63.

XX Immunoglobulin E; IGE; epsilon heavy chain; antigenic; antigen;
KW immunogenic; immunostimulatory; carrier protein; helper T cell epitope;
KW antibody; allergy; allergic disease; immunisation; anti-allergic;
KW anti-anaphylactic; anti-asthmatic; asthma; anaphylaxis; dermatitis.

XX Unidentified.

XX WO9967293-A1.

XX 29-DEC-1999.

XX 21-JUN-1999; 99WO-US013959.

XX 20-JUN-1998; 98US-00100287.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY, Walfield AM;

XX WPI; 2000-160578/14.

XX New antigenic peptide from the CH3 domain of immunoglobulin E, fusions for immunization against allergy.

XX Claim 11; Page 79; 155pp; English.

CC The present invention describes immunoglobulin E (IGE)-CH3 domain antigenic peptides (I). (I) have anti-allergic, anti-anaphylactic and anti-asthmatic properties. (I) induces polyclonal antibodies specific for a target effector site on the epsilon-heavy chain of IGE, and so preventing triggering and activation of mast cells and basophils and downregulation of IGE synthesis. Conjugates, or fusion peptides, containing (I) are used for active immunisation against IGE-mediated allergies, e.g. food allergies, asthma, anaphylaxis, or flea-allergy dermatitis. Nucleic acids that encode these compounds are useful for recombinant production of corresponding peptides or in DNA vaccines. Conjugates of (I) that include a promiscuous T helper cell epitope (functional in genetically diverse subjects), in addition to a B cell target epitope, have increased immunogenicity and may include cyclic constraints (disulfide bridge) to stabilise conformational features and maximize cross-reactivity to the natural target. They induce safe (non-anaphylactogenic) antibodies. AAY79994 to AAY80084 represent amino acid sequences used in the exemplification of the present invention

XX SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 3; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17
 |||||

RESULT 63
 AAY54539
 ID AAY54539 standard; peptide; 17 AA.
 XX AC AAY54539;
 XX DT 25-APR-2000 (first entry)
 XX DE T helper cell (Th) epitope of tetanus toxin.
 XX KW Human; CD4 protein; antigenic peptide; CDR2-like domain; apoptosis;
 KW syncytia formation; human immune deficiency virus; HIV binding;
 KW CD4-Class II interaction; immunisation; CD4 surface complex;
 KW immune response; transplant rejection; autoimmune disease; psoriasis;
 KW rheumatoid arthritis; systemic lupus erythematosus; tetanus toxin.
 XX OS Clostridium tetani.
 XX WO9967294-A1.
 XX PD 29-DEC-1999.
 XX PF 21-JUN-1999; 99WO-US014030.
 XX PR 20-JUN-1998; 98US-00100409.
 XX PA (UNBI-) UNITED BIOMEDICAL INC.
 XX FI Wang CY;
 XX WPI; 2000-160579/14.
 XX PT New antigenic peptide from the CDR2 domain of CD4, for immunization
 XX against e.g. human immune deficiency virus.
 XX PS Claim 11; Page 65; 106pp; English.
 XX CC The present sequence represents a broadly reactive promiscuous T helper
 CC cell (Th) epitope derived from tetanus toxin. It is conjugated to
 CC antigenic peptides derived from the CDR2-like domain of the human CD4
 CC protein. These antigenic peptides present neutralising receptor/co-
 CC receptor effector sites of the CDR2-like domain. The peptides evoke
 CC effective antibody responses by having optimised site-specificity. The
 CC induced antibodies block human immune deficiency virus (HIV) binding and
 CC syncytia formation. They may also block CD4-Class II interactions with
 CC other cells, deliver signals to T cells (inhibiting normal CD4+-mediated
 CC immunoregulatory functions) or induce apoptosis of CD4 cells by
 CC simultaneous engagement of T cell receptors. Conjugates and peptides
 CC containing the antigenic peptides are used for active immunisation to
 CC generate antibodies against CD4 surface complexes, especially to prevent
 CC binding of HIV to CD4 and thus HIV infection, but also to treat
 CC undesirable immune responses such as transplant rejection, or autoimmune
 CC diseases (rheumatoid arthritis, systemic lupus erythematosus or
 CC psoriasis). These conjugates produce high-titre antibodies which are
 CC broadly neutralising against primary isolates from all classes of HIV-1
 XX and of HIV-2
 XX SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 3; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17
 |||||

RESULT 64
 AAB31118
 ID AAB31118 standard; peptide; 17 AA.
 XX AC AAB31118;
 XX DT 02-APR-2001 (first entry)
 XX DE Antigenic fragment of tetanus protein.
 XX KW Polypeptidic peptide; p53; cancer; human leukocyte antigen; HLA;
 KW immune response; cytotoxic T cell; CTL; cytokine secretion;
 KW interleukin-2; IL-2; IL-4; gamma-interferon; p53-related cancer;
 KW tetanus protein.
 XX OS Clostridium tetani.
 XX FR2794368-A1.
 XX PD 08-DEC-2000.
 XX PF 07-OCT-1999; 99FR-00012512.
 XX PR 03-JUN-1999; 99FR-00007012.
 XX PA (BIOV-) BIOVECTOR THERAPEUTICS SA.
 XX (INRM) INSERM INST NAT SANTE & RECH MEDICALE.
 XX PI Choppin J, Bourgault VI, Guillet JG, Connan F, Ferries E;
 XX WPI; 2001-064173/08.
 XX PT New polypeptidic fragments from the p53 protein, useful for treatment or
 XX prevention of cancer, e.g. of breast or colon.
 XX PS Disclosure; Page 12; 26pp; French.
 XX CC The present sequence represents an antigenic fragment of tetanus protein,
 CC which is included in vaccines of the invention. The specification
 CC describes polypeptidic fragments of human p53, which is overexpressed in
 CC many types of cancers. The p53 polypeptidic fragments bind stably to
 CC human leukocyte antigen (HLA) type molecules. The p53 peptides induce a
 CC specific immune response. They induce cytotoxic T cells
 CC (CTL), of cells that express the p53 peptides associated with appropriate
 CC HLA molecules and induce secretion of cytokines (particularly interleukin
 CC (IL)-2 and IL-4, and gamma-interferon) by these CTL. The p53 peptides,
 CC derivatives, nucleic acids encoding them and specific antibodies are
 CC used, in compositions or vaccines, to treat or prevent diseases p53-
 CC related cancers, particularly of breast, colon, lung or bladder
 XX SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15
 |||||

RESULT 65
 AAM99516
 ID AAM99516 standard; peptide; 17 AA.
 XX AC AAM99516;

```

XX 07-DEC-2001 (first entry)
XX DT
XX DE
XX DE Vaccine related MHC ligand peptide SEQ ID NO:619.
XX KW
XX KW Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
XX KW immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
XX KW bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
XX KW pharmaceutical; immune disorder; immune deficiency; autoimmune;
XX KW hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
XX KW central nervous system disease; cancer; melanoma; anti-melanoma vaccine;
XX KW human immunodeficiency virus.
XX OS
XX OS Clostridium tetani.
XX PN
XX PN WO200170772-A2.
XX XX
XX 27-SEP-2001.
XX PF
XX PF 22-MAR-2001; 2001WO-FR000872.
XX PR
XX PR 23-MAR-2000; 2000FR-00003711.
XX XX
XX (FABR ) FABRE MEDICAMENT SA PIERRE.
XX PI
XX PI Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;
XX XX
XX WPI; 2001-611470/70.
XX DR
XX DR
XX PT
XX PT Stabilized pharmaceutical containing N-terminal glutamic acid or
XX PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
XX PT with strong acid.
XX PS
XX PS Claim 9; Page 136; 149pp; French.
XX XX
XX The present invention describes a pharmaceutical compound (I) that
XX CC contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in
XX CC the form of an addition salt with a strong, physiologically acceptable
XX CC acid (II). Also described are: (a) a pharmaceutical composition
XX CC containing at least one (I); (b) a vaccine containing at least one (I)
XX CC where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a
XX CC method for in vitro diagnosis of diseases associated with the presence of
XX CC (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process
XX CC for preparing (I). (I) has immunomodulator, endocrine, antiallergic,
XX CC neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and
XX CC cytostatic activities. (I) are useful, in human or veterinary medicine,
XX CC in pharmaceutical compositions (for treating immune disorders, e.g.
XX CC immune deficiency, autoimmune states, hypersensitivity, allergy; graft
XX CC rejection, infection, hormonal disorders and central nervous system
XX CC diseases), also, where (I) is a MHC ligand (Ia), in vaccines for
XX CC treatment or prevention of: (i) viral, bacterial, parasitic or fungal
XX CC infections; or (ii) of cancers. A particular application is in anti-
XX CC melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases
XX CC associated with interactions between MHC and (I), e.g. melanoma and human
XX CC immunodeficiency virus infection. AAM98898 to AAM99592 represent peptides
XX CC which can be used in pharmaceutical compounds from the present invention
XX SQ
XX Sequence 17 AA;

Query Match 100.0%; Score 74; DB 4; Length 17;
Best Local Similarity 100.0%; Pred. No. 1.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | |
Db 1 QYIKANSKFIGITEL 15

RESULT 66
AAB84435
ID AAB84435 standard; peptide; 17 AA.
XX
XX AAB84435;

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XX 22-AUG-2001 (first entry)
XX DT
XX DE
XX DE Amino acid sequence of T helper cell epitope of tetanus toxin.
XX KW
XX KW Beta-amyloid precursor protein; APP; chimeric peptide; B cell epitope;
XX KW vaccine; T helper cell epitope.
XX OS
XX OS Clostridium tetani.
XX PN
XX PN WO200142306-A2.
XX XX
XX 14-JUN-2001.
XX PF
XX PF 08-DEC-2000; 2000WO-US033203.
XX PR
XX PR 08-DEC-1999; 99US-0169687P.
XX XX
XX (MIND-) MINDSET BIOPHARMACEUTICALS USA INC.
XX PI
XX PI Chain B;
XX XX
XX WPI; 2001-381648/40.
XX DR
XX DR
XX PT
XX PT Novel chimeric peptide containing N- or C-terminal end-specific B cell
XX PT epitope from naturally occurring internal peptide cleavage product (such
XX PT as beta amyloid peptide) of a precursor protein, joined to T cell
XX PT epitope.
XX PS
XX PS Claim 8; Page 43; 47pp; English.
XX CC
XX CC The present sequence represents a T helper cell epitope, which is used to
XX CC create chimeric peptides of the invention. The chimeric peptides contain
XX CC a N- or C-terminal end-specific B cell epitope from a naturally occurring
XX CC internal peptide cleavage product of a precursor or mature protein, as a
XX CC free N- or C-terminus, joined to a T cell epitope, with or without a
XX CC spacer amino acid residue. Chimeric peptides comprising beta-amyloid
XX CC precursor protein (APP) peptides slow down, reduce or prevent the
XX CC accumulation of amyloid beta peptide in the extracellular space,
XX CC interstitial fluid and cerebrospinal fluid of the brain, and aggregation
XX CC into senile amyloid deposits or plaques. They also block the interaction
XX CC of amyloid beta peptides with other molecules that contribute the
XX CC neurotoxicity of amyloid beta. The chimeric peptides are useful for
XX CC immunizing humans against the free N- or C-terminus of an internal self
XX CC peptide cleavage product (e.g. APP peptide) derived from a precursor
XX CC protein or a mature protein. The internal peptide cleavage product is the
XX CC self molecule of the mammal
XX SQ
XX Sequence 17 AA;

Query Match 100.0%; Score 74; DB 4; Length 17;
Best Local Similarity 100.0%; Pred. No. 1.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | |
Db 3 QYIKANSKFIGITEL 17

RESULT 67
AAB30941
ID AAB30941 standard; peptide; 17 AA.
XX
XX AAB30941;
XX XX
XX 02-APR-2001 (first entry)
XX DT
XX DE
XX DE Amino acid sequence of peptide derived from tetanus protein.
XX KW
XX KW Polypeptidic peptide; E6 protein; E7 protein; HPV; CD4 epitope;
XX KW T helper cell; human leukocyte antigen; HLA; immune response; cytotoxic;
XX KW cytotoxic T cell; CTL; cytokine secretion; interleukin-2; IL-2; IL-4;
XX KW gamma-interferon; HPV infection; cervical neoplasia; invasive cancer;

```

KW vulvar intraepithelial neoplasia.
 XX Clostridium tetani.
 XX FR2794371-A1.
 XX 08-DEC-2000.
 XX 07-OCT-1999; 99FR-00012511.
 XX 03-JUN-1999; 99FR-00007012.
 XX (BIOV-) BIOVECTOR THERAPEUTICS SA.
 PA (INRM) INSERM INST NAT SANTE & RECH MEDICALE.
 XX Choppin J, Bourgault VI, Guillet JG, Connan F, Ferries E;
 XX WPI; 2001-064175/08.
 XX New polypeptidic fragments from human papilloma virus E6 and E7 proteins,
 PT useful for treatment or prevention of e.g. cervical neoplasia and cancer.
 XX Disclosure; Page 12; 27pp; French.
 XX The present sequence is derived from a tetanus protein, and is included
 CC in vaccines of the invention. The specification describes polypeptidic
 CC fragments from the E6 and E7 proteins of human papilloma virus (HPV). The
 CC HPV peptides include CD4 epitopes recognised by T helper cells. They bind
 CC stably to human leukocyte antigen (HLA) type molecules. The HPV peptides
 CC induce a specific immune response, particularly cytotoxicity, caused by
 CC cytotoxic T cells (CTL). They also induce secretion of cytokines
 CC (particularly interleukin-2 (IL-2) and IL-4, and gamma-interferon) by
 CC CTL. The HPV peptides, their derivatives, nucleic acids encoding them and
 CC specific antibodies are used, in compositions or vaccines, to treat or
 CC prevent diseases associated with HPV infection, e.g. cervical or vulvar
 CC intraepithelial neoplasia and invasive cancer of the cervix uteri. The
 CC antibodies are also useful for in vitro diagnosis of these diseases
 XX Sequence 17 AA;
 SQ
 Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 68
 AAB31029
 ID AAB31029 standard; peptide; 17 AA.
 XX AAB31029;
 XX 02-APR-2001 (first entry)
 XX Antigenic fragment of tetanus protein.
 XX Polypeptidic fragment; Nef protein; HIV; human leukocyte antigen; HLA;
 KW immune response; cytotoxicity; cytotoxic T cell; CTL; cytokine secretion;
 KW interleukin-2; IL-2; IL-4; gamma-interferon; vaccine; HPV; tetanus;
 KW acquired immune deficiency syndrome.
 XX Clostridium tetani.
 XX FR2794370-A1.
 XX 08-DEC-2000.
 XX 03-JUN-1999; 99FR-00007012.
 XX 03-JUN-1999; 99FR-00007012.

XX (BIOV-) BIOVECTOR THERAPEUTICS SA.
 PA (INRM) INSERM INST NAT SANTE & RECH MEDICALE.
 XX Choppin J, Bourgault VI, Guillet JG, Connan F, Ferries E;
 XX WPI; 2001-064174/08.
 XX New polypeptidic fragments from Nef protein of the human immune
 PT deficiency virus, useful for treatment or prevention of acquired immune
 PT deficiency syndrome.
 XX Disclosure; Page 6; 24pp; French.
 XX The present sequence represents an antigenic fragment of tetanus protein,
 CC which is included in vaccines of the invention. The specification
 CC describes polypeptidic fragments from the Nef protein of human immune
 CC deficiency virus (HIV). The Nef peptides bind stably to human leukocyte
 CC antigen (HLA) type molecules. The Nef peptides induce a specific immune
 CC response. Particularly, they induce cytotoxicity, by cytotoxic T cells
 CC (CTL), of cells that express Nef associated with appropriate HLA
 CC molecules and induce secretion of cytokines (particularly interleukin
 CC (IL)-2 and IL-4, and gamma-interferon by these CTL. The Nef peptides,
 CC their derivatives, nucleic acids encoding them and specific antibodies
 CC are used, in compositions or vaccines, to treat or prevent diseases
 CC associated with human immunodeficiency virus (HIV) infection,
 CC specifically acquired immune deficiency syndrome. The antibodies are also
 CC useful for in vitro diagnosis of these diseases
 XX Sequence 17 AA;
 SQ
 Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 1 QYIKANSKFIGITEL 15
 |||||
 RESULT 69
 AAG62904
 ID AAG62904 standard; peptide; 17 AA.
 XX AAG62904;
 XX 17-SEP-2001 (first entry)
 XX Amino acid residues 830-846 of tetanus toxin.
 XX tetanus toxin; T cell epitope; CD8 response; Th1 type immune response;
 KW Th1 CD4-specific T lymphocyte; infection; cytotoxic T lymphocyte; CTL;
 KW antiretroviral therapy.
 XX Clostridium tetani.
 XX Key Location/Qualifiers
 FH Modified-site 1 /note= "acetylated residue"
 FT Modified-site 17 /note= "-CONH2 attached"
 XX WO200149821-A2.
 XX 12-JUL-2001.
 XX 28-DEC-2000; 2000WO-FR003708.
 XX 30-DEC-1999; 99FR-00016716.
 XX (CNRS) CNRS CENT NAT RECH SCI.
 PA (INSP) INST PASTEUR LILLE.
 PA (INRM) INSERM INST NAT SANTE & RECH MEDICALE.

PA (SEDA-) SEDAC SOC ETUD & DEV ANTIGENES COMBINATO.
 XX Pancre V, Gras-Masse H, Bouzidi A, Hachulla E, Auriault C;
 XX WPI; 2001-441868/47.
 DR CD4-specific T lymphocytes of Th1 type, useful in immunotherapy of
 PT infections, specifically by human immunodeficiency virus.
 XX
 PS Example 3; Page 13; 18pp; French.
 XX
 CC The present sequence represents a peptide, comprising residues 830-846 of
 CC tetanus toxin. The peptide is a T cell epitope. The peptide induces a Th1
 CC type immune response, and is used to produce a Th1 CD4-specific T
 CC lymphocyte cell line. To produce the cell lines, CD4+ T cells are
 CC isolated from a donor sample, and are subjected to in vitro immunisation
 CC with T cell epitopes, in the presence of dendritic cells. The cell lines
 CC of the invention induce cytotoxic T lymphocytes (CTL), i.e. a CD8
 CC response, against infectious agents such as viruses, bacteria and
 CC parasites. The cell lines are used to prevent or treat infections caused
 CC by viruses, bacteria and parasites, specifically human immune deficiency
 CC virus (HIV), especially in combination with highly active antiretroviral
 CC therapy, to restore the Th1 response. Treatment with the composition
 CC causes a marked and rapid reduction in viremia but does not eradicate the
 CC virus
 XX
 SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 70
 AAB15589
 ID AAB15589 standard; peptide; 17 AA.
 XX
 AC AAB15589;
 XX
 DT 02-MAR-2001. (first entry)
 XX
 DE Peptide 5 for peptides containing alpha-oxoaldehyde group.
 XX
 KW Solid supports; alpha-oxoaldehyde group; glyoxylic acid derivative;
 KW vaccine; macromolecule; microtitration plate.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Modified-site 1 /note= "Acylated N-terminus"
 FT
 XX
 PN FR2792631-A1.
 XX
 PD 27-OCT-2000.
 XX
 XX 21-APR-1999; 99FR-00005024.
 XX
 PR 21-APR-1999; 99FR-00005024.
 XX
 XX (INSP) INST PASTEUR LILLE.
 PA (CNRS) CNRS CENT NAT RECH SCI.
 XX
 PI Melnyx O, Fruchart JS, Bourel L, Gras MH;
 XX
 DR WPI; 2001-094357/11.
 XX
 XX Solid supports for the synthesis of compounds having an alpha-oxo-
 FT aldehyde group and peptides, made by solid phase synthesis using such

PT supports.
 XX
 PS Example 4; Fig 3; 86pp; French.
 XX
 CC The invention relates to solid supports, functionalized for the synthesis
 CC of compounds having an alpha-oxo-aldehyde group, a process for the
 CC synthesis of such compounds. The invention also covers peptides having an
 CC alpha-oxoaldehyde group situated in a position other than a N-terminal
 CC extremity and not being linked through amide to an amine on a side chain
 CC of lysine or ornithine, prepared using a support of the invention. This
 CC sequence represents an example of a peptide used in the method of the
 CC invention. Solid phase synthesis of alpha-oxoaldehyde peptides and other
 CC organic molecules such as non-peptidic derivatives of glyoxylic acid.
 CC Such products are themselves useful in the pharmaceutical industry for
 CC synthetic vaccines, synthesis of macromolecules, and microtitration
 CC plates
 XX
 SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 4; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 1 QYIKANSKFIGITEL 15

RESULT 71
 AAE35609
 ID AAE35609 standard; peptide; 17 AA.
 XX

AC AAE35609;
 XX
 DT 17-JUN-2003 (first entry)
 XX

DE Clostridium tetani T helper cell epitope #1.

KW Immunogen; helper T cell; Th epitope; amyloid beta; Alzheimer's disease;
 KW Abeta; AD; brain tissue plaque; immunoneutralisation; neuroprotective;
 KW vaccine; nootropic.

OS Clostridium tetani.

PN WO200296350-A2.

PD 05-DEC-2002.

XX 02-APR-2002; 2002WO-US010293.

XX 25-MAY-2001; 2001US-00865294.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY;

XX WPI; 2003-201258/19.

XX Novel peptide immunogen comprising a helper T cell epitope, an N-terminal
 PT fragment of amyloid beta peptide linked to the epitope, and optionally a
 PT spacer, useful for preventing or treating Alzheimer's disease.

XX Claim 1; Page 36; 77pp; English.

XX The present invention relates to a novel peptide immunogen comprising a
 CC helper T cell (Th) epitope, an N-terminal fragment of amyloid beta
 CC (Abeta) peptide (residues 1-42) linked to the epitope and optionally a
 CC spacer consisting of at least an amino acid to separate the immunogenic
 CC domains. Sequences of the invention are useful for preventing or treating
 CC Alzheimer's disease (AD) in a mammal, to produce antibodies to Abeta
 CC peptide that is cross-reactive to soluble Abeta peptides and brain tissue
 CC plaques formed from it. They are useful for eliciting a site-directed
 CC mutagenesis against the main functional/regulatory site of the Abeta

CC peptide and for generating antibodies, which are highly cross-reactive to
 CC the soluble Abeta peptide and the amyloid plaques formed in the brain of
 CC Alzheimer's disease patients. The sequences are useful for induction of
 CC accelerated clearance of amyloid plaques and immunoneutralisation of the
 CC soluble Abeta derived toxins in the brain to prevent and treat
 CC Alzheimer's disease. They are also useful as vaccines. The present
 CC sequence is Clostridium tetani T helper (Th) cell epitope used in the
 CC exemplification of the invention
 XX
 SQ Sequence 17 AA;

Query Match 100.0%; Score 74; DB 6; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17

RESULT 72
 ADA09238
 ID ADA09238 standard; peptide; 17 AA.

XX AC ADA09238;
 XX 06-NOV-2003 (first entry)
 DT Tetanus toxoid peptide.

XX preproinsulin; type I diabetes; T-cell; proinsulin peptide; cytokine;
 KW insulinitis.
 XX Clostridium tetani.

XX US6509165-B1.
 XX 21-JAN-2003.

XX 06-JUN-1995; 95US-00472701.
 XX 08-JUL-1994; 94US-00272220.

XX (DART-) DARTMOUTH COLLEGE.

XX Griffin AC, Hickey WF;

XX WPI; 2003-595984/56.

XX Diagnosing Type-1 diabetes, by contacting patient sample comprising T-
 PT cells with proinsulin peptide and detecting the ability of peptide to
 PT stimulate T-cells by measuring ability of T-cells to proliferate or
 PT produce cytokines.

XX Example 3; Col 25-26; 27pp; English.

XX The invention relates to diagnosing Type-1 diabetes in a subject,
 CC comprising obtaining a biological sample comprising T-cells from a
 CC subject, contacting a biological sample in vitro with a proinsulin
 CC peptide and detecting the ability of the proinsulin peptide to
 CC preferentially stimulate the T-cells of diabetic patients by measuring
 CC the ability of the T-cells to proliferate or ability of the T-cells to
 CC produce cytokines. The method is useful for diagnosing Type-1 diabetes in
 CC a subject. The diagnosis method is rapid and accurate. The present
 CC sequence represents a tetanus toxoid peptide used as a control in an
 CC experiment designed to detect proinsulin peptide reactive T-cells in the
 CC blood of type I diabetic patients.

XX Sequence 17 AA;

Query Match 100.0%; Score 74; DB 6; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17

RESULT 73
 ADM80624
 ID ADM80624 standard; peptide; 17 AA.

XX AC ADM80624;

XX 03-JUN-2004 (first entry)

XX Human helper T cell epitope peptide SEQ ID NO:5.

XX amyloid beta; Abeta(4-10); helper T cell epitope; neuroprotective;
 KW neurotropic; Alzheimer's disease; amyloid deposit; brain; amyloid fibril.

XX Homo sapiens.

XX WO2003089460-A1.

XX 30-OCT-2003.

XX 07-APR-2003; 2003WO-CA000502.

XX 19-APR-2002; 2002US-0373914P.

XX (UTOR) UNIV TORONTO GOVERNING COUNCIL.

XX St George- Hyslop P, McLauring J;

XX WPI; 2003-903280/82.

XX New immunogenic peptide Abeta(4-10), useful in preparing a composition
 PT for treating Alzheimer's disease.

XX Claim 2; SEQ ID NO 5; 86pp; English.

XX The invention relates to a novel peptide represented by formula (I) given
 CC below. The new peptide is represented by formula (I): (A) n -(Th) m -(B)
 CC o -Abeta(4-10)-(C) p where each of A, B and C are an amino acid residue
 CC or sequence of amino acid residues; n, o or p = 0-20, when o is 0 then Th
 CC is directly connected to the B cell epitope Abeta(4-10) through a peptide
 CC bond without any spacer residue; Th is a sequence of amino acid residues
 CC that comprises a helper T cell epitope or its immune enhancing analogue
 CC or segment; m = 0-5; Abeta(4-10) is Phe-Arg-His-Asp-Ser-Gly-Tyr
 CC (ADM80621) or its analogue containing a conservative substitution. A
 CC peptide of the invention has neuroprotective and neurotropic activity. The
 CC peptide is useful in preparing a composition for treating Alzheimer's
 CC disease. Specifically, the methods are useful for reducing the amount of
 CC amyloid deposits in the brain of an individual afflicted with Alzheimer's
 CC disease, disaggregating the amyloid fibrils in the brain of an individual
 CC afflicted with Alzheimer's disease and determining if a compound is an
 CC inhibitor of amyloid deposition and fibril formation. The present
 CC sequence represents a helper T cell epitope peptide of the invention.

XX Sequence 17 AA;

Query Match 100.0%; Score 74; DB 7; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 3 QYIKANSKFIGITEL 17

RESULT 74
 ADG74074
 ID ADG74074 standard; peptide; 17 AA.
 XX

AC ADG74074;
 XX
 DT 11-MAR-2004 (first entry)
 XX
 DE Tetanus immunostimulatory epitope P2 TT 830-846.
 XX
 KW Epitope; virus-like particle; vaccine.
 XX
 OS Clostridium tetani.
 XX
 PN W02003103605-A2.
 XX
 PD 18-DEC-2003.
 XX
 PF 06-JUN-2003; 2003WO-US018247.
 XX
 PR 07-JUN-2002; 2002US-0386921P.
 XX
 PA (LARG-) LARGE SCALE BIOLOGY CORP.
 XX
 PI McCormick AA, Smith ML, Palmer KE, Lindbo JA, Nguyen LV;
 PI Pogue GP;
 XX
 DR WPI; 2004-062210/06.
 XX
 XX Preparing a virus-like particle (VLP), useful as a vaccine, an anti-
 PT allergy medication or a diagnostic reagent, comprises disassembling a
 PT tobacco mosaic virus and forming intact VLP of one or more encapsidation
 PT intermediates.
 XX
 PS Example 1; SEQ ID NO 14; 86pp; English.
 XX
 CC The invention provides a method for generating virus-like particle (VLP)
 CC vaccines in an adaptable, predictable, stable and scalable manner.
 CC Methods are provided for making vaccines made of re-assembled VLPs.
 CC First, the VLPs are disassembled into encapsidation intermediates e.g.
 CC populations. Each encapsidation intermediate population undergoes e.g.
 CC chemical conjugation of unique peptide or nucleic acid moieties to form
 CC separate populations. A predetermined amount of each of the several (one
 CC or more) different encapsidation intermediates from the different
 CC populations is mixed and joined, forming intact VLPs, surrounding a
 CC nucleic acid core, that are composed of different encapsidation
 CC intermediates such that the reassembled VLP displays more than one
 CC peptide or nucleic acid. The nucleic acid can function as a scaffold and
 CC can also be engineered to express an immunomodulatory protein in a
 CC eukaryotic cell. The VLP is useful as a vaccine against viral or
 CC bacterial pathogens, an anti-allergy medication, and a diagnostic reagent
 CC or a combinatorial chemistry reagent (all claimed). Tobacco mosaic virus
 CC (TMV) was used as a VLP carrier in examples from the invention, in which
 CC epitope sequences were fused in-frame to the TMV U1 coat protein. TMV
 CC VLPs were reassembled in vitro decorated with a single epitope
 CC (monovalent) or with a collection of different epitopes (multivalent).
 CC The present sequence is that of tetanus toxoid immunostimulatory peptide,
 CC P2 TT 830-846. Attempts to express this in-frame with U1 as a soluble
 CC protein were unsuccessful.
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 8; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 1 QYIKANSKFIGITEL 15
 RESULT 75
 ADJ25950
 ID ADJ25950 standard; peptide; 17 AA.
 XX
 AC ADJ25950;
 XX

DT 20-MAY-2004 (first entry)
 XX
 DE Tetanus toxoid peptide.
 XX
 KW antidiabetic; immunosuppressive; type I diabetes; proinsulin;
 KW immunological response; T cell; preproinsulin; tetanus toxoid.
 XX
 OS Clostridium tetani.
 XX
 PN US20040021113-A1.
 XX
 PD 01-JAN-2004.
 XX
 PF 17-DEC-2002; 2002US-00321717.
 XX
 PR 08-JUL-1994; 94US-00272220.
 PR 06-JUN-1995; 95US-00472701.
 XX
 PA (DART-) DARTMOUTH COLLEGE.
 XX
 PI Griffin AC, Hickey WF;
 XX
 DR WPI; 2004-178909/17.
 XX
 XX Detecting indicator of type I diabetes in subject, by contacting sample
 PT with proinsulin peptide compound stimulating immunological response,
 PT detecting immunological activity in sample against proinsulin peptide.
 XX
 PS Example 3; SEQ ID NO 23; 27pp; English.
 XX
 CC The invention describes a method of detecting an indicator (I) of type I
 CC diabetes in a subject. The method comprises obtaining a biological sample
 CC from the subject, contacting the sample with a proinsulin peptide
 CC compound (II) which stimulates an immunological response by T cells of
 CC type I diabetic subjects and detecting an immunological activity in the
 CC sample against (II) in the subject. The method is useful for detecting an
 CC indicator of type I diabetes in a subject. Also described is a method is
 CC useful for inhibiting the development or progression of type I diabetes
 CC in a subject. This is the amino acid sequence of a tetanus toxoid peptide
 CC associated with the study of proinsulin peptide reactive T cells.
 XX
 SQ Sequence 17 AA;
 Query Match 100.0%; Score 74; DB 8; Length 17;
 Best Local Similarity 100.0%; Pred. No. 1.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 3 QYIKANSKFIGITEL 17
 RESULT 76
 AAY26607
 ID AAY26607 standard; peptide; 18 AA.
 XX
 AC AAY26607;
 XX
 DT 14-SEP-1999 (first entry)
 XX
 DE HIV-derived lipopeptide epitope TT for mixed micelles.
 XX
 KW Micelle; microaggregate; induction; immune response; lipopeptide; CTL;
 KW cytotoxic T-lymphocyte; epitope; lipid; helper T-lymphocyte; HTL; HBV;
 KW tetanus; toxin; vaccine; HIV; hepatitis B virus; papilloma virus; p53;
 KW melanoma; Plasmodium falciparum; malaria.
 XX
 OS Synthetic.
 OS Human immunodeficiency virus 1.
 XX
 PN FR2771640-A1.
 XX
 PD 04-JUN-1999.

CC than or equal to 1,000 nM. The pharmaceutical can be used to induce a
 CC helper T cell response. The pharmaceutical focuses the immune response
 CC towards selected determinants and could therefore be used in cases of
 CC chronic viral diseases and cancer. Examples of diseases that can be
 CC treated using the peptide containing pharmaceutical include autoimmune
 CC diseases (rheumatoid arthritis, multiple sclerosis, and myasthenia
 CC gravis), allograft rejection, allergies, Lyme disease, hepatitis, post-
 CC streptococcal endocarditis or glomerulonephritis and food
 CC hypersensitivities. The peptide epitopes can be used to enhance immune
 CC responses against other immunogens administered with the peptides.
 CC Diseases which can be treated using immunogenic mixtures include prostate
 CC cancer, hepatitis B, hepatitis C, AIDS, renal carcinoma, cervical
 CC carcinoma, lymphoma, and condyloma acuminatum. The peptides may also be
 CC used to make monoclonal antibodies useful as potential diagnostic or
 CC therapeutic agents. The peptides may also be useful as diagnostic
 CC reagents, for example, to determine the susceptibility of an individual
 CC to a treatment regimen. Also, the peptides may be used to predict which
 CC individuals will be at substantial risk of developing chronic infection.
 CC The selection of appropriate T and B cell epitopes should allow the
 CC development of epitope based vaccines particularly towards conserved
 CC epitopes of pathogens which are characterized by high sequence
 CC variability such as HIV, HCV and Malaria
 XX
 SQ Sequence 19 AA;

Query Match 100.0%; Score 74; DB 3; Length 19;
 Best Local Similarity 100.0%; Pred. No. 1.2e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 3 QYIKANSKFIGITEL 17
 |||||

RESULT 79
 AAM99517
 ID AAM99517 standard; peptide; 19 AA.

XX AAM99517;
 XX
 DT 07-DEC-2001. (first entry)
 XX
 DE Vaccine related MHC ligand peptide SEQ ID NO:620.

XX Glutamic acid; glutamine; vaccine; major histocompatibility complex; MHC;
 KW immunomodulator; antiallergic; endocrine; neuroprotectant; virucidal;
 KW bactericidal; antiparasitic; fungicidal; cytostatic; medicine;
 KW pharmaceutical; immune disorder; immune deficiency; autoimmune;
 KW hypersensitivity; allergy; graft rejection; infection; hormonal disorder;
 KW central nervous system disease; cancer; melanoma; anti-melanoma vaccine;
 KW human immunodeficiency virus.

XX Clostridium tetani.
 OS
 XX WO200170772-A2.

XX 27-SEP-2001.

XX 22-MAR-2001; 2001WO-FR000872.

XX 23-MAR-2000; 2000FR-00003711.

XX (FABR) FABRE MEDICAMENT SA PIERRE.

XX Klinguer-Hamour C, Corvaia N, Beck A, Goetsch L;

XX WPI; 2001-611470/70.

XX Stabilized pharmaceutical containing N-terminal glutamic acid or
 PT glutamine, useful e.g. in anti-melanoma vaccines, is an addition salt
 PT with strong acid.

XX Claim 9; Page 136; 149pp; French.

XX The present invention describes a pharmaceutical compound (I) that
 CC contains an N-terminal glutamic acid (Glu) or glutamine (Gln) residue in
 CC the form of an addition salt with a strong, physiologically acceptable
 CC acid (II). Also described are: (a) a pharmaceutical composition
 CC containing at least one (I); (b) a vaccine containing at least one (I)
 CC where this is a major histocompatibility complex (MHC) ligand (Ia); (c) a
 CC method for in vitro diagnosis of diseases associated with the presence of
 CC (Ia); (d) a kit for method (c) that includes a (Ia); and (e) a process
 CC for preparing (I). (I) has immunomodulator, endocrine, antiallergic,
 CC neuroprotectant, virucidal, bactericidal, antiparasitic, fungicidal and
 CC cytostatic activities. (I) are useful, in human or veterinary medicine,
 CC in pharmaceutical compositions (for treating immune disorders, e.g.
 CC immune deficiency, autoimmune states, hypersensitivity, allergy, graft
 CC rejection, infection, hormonal disorders and central nervous system
 CC diseases), also, where (I) is a MHC ligand (Ia), in vaccines for
 CC treatment or prevention of: (i) viral, bacterial, parasitic or fungal
 CC infections; or (ii) of cancers. A particular application is in anti-
 CC melanoma vaccines. (I) are also useful for in vitro diagnosis of diseases
 CC associated with interactions between MHC and (I), e.g. melanoma and human
 CC immunodeficiency virus infection. AAM98898 to AAM99592 represent peptides
 CC which can be used in pharmaceutical compounds from the present invention
 XX
 SQ Sequence 19 AA;

Query Match 100.0%; Score 74; DB 4; Length 19;
 Best Local Similarity 100.0%; Pred. No. 1.2e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 |||||

RESULT 80
 ADH09986
 ID ADH09986 standard; peptide; 20 AA.

XX ADH09986;

XX 11-MAR-2004 (first entry)

XX Modified tetanus toxoid T-helper epitope.

XX Maleimide cluster; multivalent peptide; multivalent protein;
 KW peptide synthesis; vaccination; peptide drug delivery; drug targeting;
 KW protein folding; cholic acid core; tetanus toxoid; T-helper epitope.

XX Synthetic.

OS Clostridium tetani.

XX Key Location/Qualifiers

FT Modified-site 20 /note= "C-terminal amide"

XX WO2004000802-A2.

XX 31-DEC-2003.

XX 20-JUN-2003; 2003WO-US019779.

XX 20-JUN-2002; 2002US-0390776P.

XX (UYMA-) UNIV MARYLAND BIOTECHNOLOGY INST.

XX Wang L, Ni J, Li H, Singh S;

XX WPI; 2004-156401/15.

XX Maleimide cluster comprising core molecule, carbohydrate core, cholic
 PT acid core, useful as template for assembling multivalent peptide.

XX Example 9; Fig 10; 63pp; English.

XX The invention relates to a maleimide cluster for multivalent peptide
 CC synthesis. The maleimide cluster can comprise a core to which five or
 CC more maleimides are each attached via a linker, or it can comprise a
 CC carbohydrate or cholic acid core to which two or more maleimides are
 CC each attached via a linker. The invention also relates to a multivalent
 CC peptide or protein comprising a maleimide cluster with identical or
 CC different peptides or proteins covalently attached to the maleimide;
 CC production of a multivalent peptide or protein; methods of vaccination,
 CC peptide drug delivery or drug targeting using the maleimide cluster; and
 CC methods of raising polyclonal or monoclonal antibodies using the
 CC maleimide cluster. The maleimide cluster is useful as a template for the
 CC assembly of multivalent peptides. These may be used in vaccination, for
 CC peptide drug delivery or for studying protein folding. A targeting
 CC protein may also be attached to maleimide clusters to facilitate the
 CC targeting of a compound to specific cells or organelles. The present
 CC sequence represents a peptide which was ligated to a cholic acid-based
 CC maleimide cluster in an example of the invention.

XX SQ Sequence 20 AA;

Query Match 100.0%; Score 74; DB 8; Length 20;
 Best Local Similarity 100.0%; Pred. No. 1.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 6 QYIKANSKFIGITEL 20
 |||||

RESULT 81
 AAB46196
 ID AAB46196 standard; peptide; 22 AA.

XX AC AAB46196;
 XX 04-APR-2001 (first entry)
 DT Tetanus toxoid epitope fusion construct #16.
 XX

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;
 PI WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent

CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 22 AA;

Query Match 100.0%; Score 74; DB 4; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 8 QYIKANSKFIGITEL 22
 |||||

RESULT 82

AAB46175
 ID AAB46175 standard; peptide; 22 AA.

XX AC AAB46175;

XX 04-APR-2001 (first entry)

XX Tetanus toxoid 830-844 epitope AN90549.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;
 PI WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 31; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 22 AA;

Query Match 100.0%; Score 74; DB 4; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY	1 QYIKANSKFIGITEL 15
DB	8 QYIKANSKFIGITEL 22
 RESULT 83	
ID	AAB46178 standard; peptide; 22 AA.
XX	
AC	AAB46178;
DT	04-APR-2001 (first entry)
DE	Tetanus toxoid 830-844 epitope AN90576.
KW	Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
KW	PC receptor mediated phagocytosis; immunogenic response; neuroprotective;
KW	amyloid precursor protein; Alzheimer's disease.
OS	Clostridium tetani.
OS	
PN	WO200072880-A2.
XX	
PD	07-DEC-2000.
PF	26-MAY-2000; 2000WO-US014810.
PR	28-MAY-1999; 99US-00322289.
PA	(NEUR-) NEURALAB LTD.
Schenk DB,	Bard F, Vasquez NJ, Yednock T;
WPI;	2001-032104/04.
Preventing or treating a disease associated with amyloid deposits, especially Alzheimer's disease, comprises administering amyloid specific antibody.	
Claim 60;	Page 119; 143pp; English.
This invention describes a novel method of preventing or treating a disease associated with amyloid deposits of amyloid precursor protein (APP) Abeta fragments in the brain of a patient, which comprises administering to the patient: (a) an antibody that binds to Abeta, the antibody binds to an amyloid deposit and induces a clearing response (PC receptor mediated phagocytosis) against it (b) a polypeptide containing an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent that induces an immunogenic response against residues 1-3 to 7-11 of Abeta. The products of the invention have neurotropic and neuroprotective activity. The method is also useful for monitoring a course of treatment being administered to a patient e.g. active and passive immunization. The methods are useful for prophylactic and therapeutic treatment of Alzheimer's disease	
Sequence 22 AA;	
Query Match	100.0%; Score 74; DB 4; Length 22;
Best Local Similarity	100.0%; Pred. No. 1.4e-06;
Matches 15;	Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY	1 QYIKANSKFIGITEL 15
Db	8 QYIKANSKFIGITEL 22
 RESULT 84	
ID	AAB46203 standard; peptide; 22 AA.
XX	
AC	AAB46203;
DT	12-AUG-2004 (first entry)
DE	Fusion protein #15 for treating neurodegenerative disorder.
KW	antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW	aggregation; brain; immunogenic response; beta-amyloid;
KW	Parkinson's disease.
OS	Synthetic.
OS	
PN	WO2004041067-A2.
XX	

PD 21-MAY-2004.
XX
PF 31-OCT-2003; 2003WO-US034527.
XX
PR 01-NOV-2002; 2002US-0423012P.
XX
PA (ELAN-) ELAN PHARM INC.
XX (REGC) UNIV CALIFORNIA.
XX
PI Schenk DB, Masliah E;
XX
XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 36; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 22 AA;
SQ
Query Match 100.0%; Score 74; DB 8; Length 22;
Best Local Similarity 100.0%; Pred. No. 1.4e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
8 QYIKANSKFIGITEL 22
RESULT 86
ADP02900
ID ADP02900 standard; peptide; 22 AA.
XX
AC ADP02900;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #12 for treating neurodegenerative disorder.
DE
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Synthetic.
OS
XX WO2004041067-A2.
PN
XX 21-MAY-2004.
PD
XX 31-OCT-2003; 2003WO-US034527.
PF
XX 01-NOV-2002; 2002US-0423012P.
XX
XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
PI
XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 36; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 22 AA;
SQ
Query Match 100.0%; Score 74; DB 8; Length 22;
Best Local Similarity 100.0%; Pred. No. 1.4e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
8 QYIKANSKFIGITEL 22
RESULT 87
ADP02919
ID ADP02919 standard; peptide; 22 AA.
XX
AC ADP02919;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #31 for treating neurodegenerative disorder.
DE
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Synthetic.
OS
XX WO2004041067-A2.
PN
XX 21-MAY-2004.
PD
XX 31-OCT-2003; 2003WO-US034527.
PF
XX 01-NOV-2002; 2002US-0423012P.
XX
XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
PI
XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 52; 78pp; English.
XX

XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 33; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 22 AA;
SQ
Query Match 100.0%; Score 74; DB 8; Length 22;
Best Local Similarity 100.0%; Pred. No. 1.4e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
8 QYIKANSKFIGITEL 22
RESULT 87
ADP02919
ID ADP02919 standard; peptide; 22 AA.
XX
AC ADP02919;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #31 for treating neurodegenerative disorder.
DE
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Synthetic.
OS
XX WO2004041067-A2.
PN
XX 21-MAY-2004.
PD
XX 31-OCT-2003; 2003WO-US034527.
PF
XX 01-NOV-2002; 2002US-0423012P.
XX
XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
PI
XX WPI; 2004-411388/38.
XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.
XX
XX Disclosure; SEQ ID NO 52; 78pp; English.
XX

CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX
 SQ Sequence 22 AA;

Query Match 100.0%; Score 74; DB 8; Length 22;
 Best Local Similarity 100.0%; Pred. No. 1.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 8 QYIKANSKFIGITEL 22

RESULT 88

AA92650
 ID AAY92650 standard; peptide; 25 AA.

XX
 AC AAY92650;

XX
 DT 10-AUG-2000 (first entry)

XX
 DE PSMpep007 - P2 inserted in hPSM insertion position 6.

XX Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

XX Synthetic.

XX Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..20
 FT /label= P2
 FT

XX WO200020027-A2.

XX
 PD 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page 117; 220pp; English.

XX AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly

CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 74; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 6 QYIKANSKFIGITEL 20

RESULT 89

AA92652
 ID AAY92652 standard; peptide; 25 AA.

XX
 AC AAY92652;

XX
 DT 10-AUG-2000 (first entry)

XX
 DE PSMpep009 - P2 inserted in hPSM insertion position 10.

XX Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

XX Synthetic.

XX Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..20
 FT /label= P2
 FT

XX WO200020027-A2.

XX
 PD 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

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XX AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly

CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 74; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 6 QYIKANSKFIGITEL 20

RESULT 90
 AAY92651
 ID AAY92651 standard; peptide; 25 AA.

AC AAY92651;

XX 10-AUG-2000 (first entry)

DE PSMpep008 - P2 inserted in hPSM insertion position 8.

XX Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.

XX Synthetic.

OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..20
 FT /label= P2

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-010501IP.

XX (MEBI-) M & E BIOTECH AS.

XX Steinnaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

PS Example 1; Page 117; 220pp; English.

XX AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly

CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 SQ Sequence 25 AA;

Query Match 100.0%; Score 74; DB 3; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 6 QYIKANSKFIGITEL 20

RESULT 91
 AAB49092
 ID AAB49092 standard; protein; 25 AA.

XX AAB49092;

XX 11-SEP-2003 (revised)

DT 27-MAR-2001 (first entry)

XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:28.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeldt-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

PS Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid

CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jacob disease, kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 25;AA;

Query Match 100.0%; Score 74; DB 4; Length 25;
 Best Local Similarity 100.0%; Pred. No. 1.7e-06; Indels 0; Gaps 0;
 Matches 15; Conservative 0; Mismatches 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 8 QYIKANSKFIGITEL 22

RESULT 92

AAR62701
 ID AAR62701 standard; peptide; 27 AA.

AC AAR62701;

XX 25-MAR-2003 (revised)

DT 10-SEP-1995. (first entry)

XX LHRH-containing immunogenic peptide.

DE Helper T cell epitope; universal immune stimulator; invasin; haptent;
 KW vaccine; LHRH; luteinising hormone releasing hormone; prostate;
 KW androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.

XX Synthetic.

XX Key Location/Qualifiers
 FH Domain 1. .17
 FT Domain /note= "tetanus toxin helper T cell epitope"
 FT Domain 18. .27
 FT Domain /note= "LHRH haptent"

XX W09425060-A1.

PN 10-NOV-1994.

XX 28-APR-1994; 94WO-US004832.

XX 27-APR-1993; 93US-00057166.

PR 14-APR-1994; 94US-00229275.

XX (LADD/) LADD A B.

PA (WANG/) WANG C Y.

PA (ZAMB/) ZAMB T.

XX Ladd AB, Wang CY, Zamb T;

XX

DR WPI; 1994-357910/44.

XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.

XX Claim 8, 12; Page 84; 213pp; English.

XX Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasin protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC haptent is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence represents an LHRH-
 CC containing, invasin-free immunogenic peptide as above which can be used
 CC as a potent vaccine for treating e.g. prostatic hyperplasia, androgen-
 CC dependent carcinoma, prostatic carcinoma, testicular carcinoma, ovarian
 CC endometriosis, benign uterine tumours, recurrent functional ovarian
 CC cysts, (severe) premenstrual syndrome or oestrogen-dependent breast
 CC cancer, or for induction of infertility. This sequence is particularly
 CC preferred. (Updated on 25-MAR-2003 to correct PN field.)

XX SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 2; Length 27;
 Best Local Similarity 100.0%; Pred. No. 1.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 3 QYIKANSKFIGITEL 17

RESULT 93

AAR82596
 ID AAR82596 standard; peptide; 27 AA.

AC AAR82596;

XX 13-JUN-1996 (first entry)

DE IgE CH4 region contg. peptide immunogen for treating allergies.

XX IgE; CH4; immunoglobulin; epsilon; immunogen; helper T cell; epitope;
 KW vaccine; allergy; antibody; constant heavy chain.

XX Synthetic.

XX W09526365-A1.

XX 05-OCT-1995.

XX 24-MAR-1995; 95WO-US003741.

XX 28-MAR-1994; 94US-00218461.

PR 25-OCT-1994; 94US-00328912.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Wang CY;

XX WPI; 1995-351297/45.

XX Synthetic peptide-based immunogen contg. IgE CH4 peptide and helper T
 PT cell epitope - useful for eliciting antibody prodn. for allergy
 PT treatment.

XX Claim 5; Page 62; 87pp; English.

XX Disclosure; Page 45; 140pp; English.

PS The invention relates to a novel pharmaceutical composition for

XX preventing or treating a disease characterised by amyloid fibril deposits

CC (amyloid plaques) in a patient. The pharmaceutical composition comprises

CC an agent that will induce an immune response against an amyloid

CC component, or an antibody or antibody fragment that binds to an amyloid

CC component. The invention also relates to a method for determining the

CC prognosis of a patient undergoing treatment for an amyloid disorder which

CC involves measuring a patient serum amount of immunoreactivity against a

CC selected amyloid component. A patient serum immunoreactivity of at least

CC four times a base line serum immunoreactivity control level indicates a

CC pharmacological improved status with respect to the disorder. The

CC prognosis of improved status of the invention are useful for treating a

CC wide variety of disorders characterised by amyloid fibril deposition in a

CC patient. Such disorders include Alzheimer's disease characterised by

CC amyloid beta peptide fibril deposits; Type 2 diabetes characterised by

CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic

CC amyloidosis associated with systemic inflammatory diseases (e.g.,

CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA

CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile

CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR

CC fibrils derived from transthyretin (TTR); transmissible spongiform

CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by

CC prion protein deposits; and beta-2-microglobulin deposits which form as a

CC result of long term haemodialysis treatment. The present sequence

CC represents an immunogenic fusion protein comprising an amyloid beta

CC peptide fused to a universal T-cell epitope which may be used in a

CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-

XX 2003 to standardise OS field)

SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 4; Length 27;
 Best Local Similarity 100.0%; Pred. No. 1.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 8 QYIKANSKFIGITEL 22

RESULT 96

ADD89947

ID ADD89947 standard; protein; 27 AA.

XX ADD89947;

AC ADD89947;

XX 29-JAN-2004 (first entry)

XX LHRH peptide used in immunostimulant complex for prostate cancer vaccine.

XX Immunostimulant; vaccine; human; immunogen; LHRH; immunotherapy;

XX prostate cancer.

XX Synthetic.

XX Homo sapiens.

XX WO2003068169-A2.

XX 21-AUG-2003.

XX 14-FEB-2003; 2003WO-US004711.

XX 14-FEB-2002; 2002US-00076674.

XX 31-JAN-2003; 2003US-00076674.

XX (UNBI-) UNITED BIOMEDICAL INC.

XX Sokoll KK;

XX WPI; 2003-778890/73.

XX Stabilized immunostimulating complex, useful for vaccination, e.g.
 PT against human immune deficiency viruses, comprises cationic peptide
 PT immunogen and anionic oligonucleotide.

XX Claim 17; SEQ ID NO 7; 159pp; English.

XX The present sequence is that of a synthetic immunogenic peptide derived
 CC from human LHRH. This is an example of peptides that can be used in
 CC claimed immunostimulatory complexes of the invention that are
 CC specifically adapted to act as adjuvant and as peptide immunogen
 CC stabiliser. The complexes comprise a CpG oligonucleotide and a
 CC biologically active peptide immunogen. The complex is particulate and can
 CC efficiently present peptide immunogens to the cells of the immune system
 CC to produce an immune response. The complexes may be prepared with various
 CC ratios of peptides to CpG oligonucleotides to provide different physical
 CC properties, such as the size of the microparticle. An immunostimulatory
 CC complex comprising the present LHRH derived peptide can be used in a
 CC vaccine for prostate cancer.

SQ Sequence 27 AA;

Query Match 100.0%; Score 74; DB 7; Length 27;
 Best Local Similarity 100.0%; Pred. No. 1.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 3 QYIKANSKFIGITEL 17

RESULT 97

ADJ56906

ID ADJ56906 standard; peptide; 27 AA.

XX ADJ56906;

XX 06-MAY-2004 (first entry)

XX Human LHRH immunogenic peptide #1.

XX Immunostimulatory complex; adjuvant; peptide immunogen stabiliser;

XX water-in-oil emulsion; suspension; vaccine; prostate cancer;

XX hormone ablation; allergy; HIV infection; foot-and-mouth disease;

XX therapy; human; antigen; LHRH.

XX Homo sapiens.

XX US2004009897-A1.

XX 15-JAN-2004.

XX 21-MAY-2003; 2003US-00355161.

XX 14-FEB-2002; 2002US-00076674.

XX (SOKO/) SOKOLL K K.

XX Sokoll KK;

XX WPI; 2004-212745/20.

XX Stabilized immunostimulatory complex useful for treating allergy, HIV

XX infection or prostate cancer, comprising cationic peptide immunogen and

XX anionic CpG oligonucleotide.

XX Claim 17; SEQ ID NO 7; 63pp; English.

XX The invention relates to an immunostimulatory complex specifically

XX adapted to act as adjuvant and as a peptide immunogen stabiliser. The

XX invention is useful for preparing a water-in-oil emulsion, suspension and

XX vaccine. It is also useful for treating prostate cancer, hormone

XX ablation, allergy, HIV infection, foot-and-mouth disease, etc. The

CC present sequence is human LHRH immunogenic peptide used in the invention.

Sequence 27 AA:

100.0%; Score 74; DB 8; Length 27;
very Match

Model	Local Similarity	Pred. No.	Indels	Gaps
Conservative	100.0%	1.8e-06	0	0
Mismatches	15		0	0

Qy 1 QYIKANSKFIGITEL 15

3 QYIKANSKFIGITEL 17

RESULT 98

AAU11422
ID AAU11422 standard: peptide: 28 AA.

AAU11422;

12-MAR-2002 (first entry)

DE Synthetic immunogen peptide 3.

Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
luteinising hormone releasing hormone; LHRH; contraceptive;
promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
breast cancer; uterine cancer; gynaecological cancer; endometriosis;
uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX Clostridium tetani.

OS Mammalia.

OS Synthetic.

OS Chimeric.

Key	Location/Qualifiers
FH	

FT	Peptide	1. .15	/note= "Tetanus toxoid sequence (830-844 aa)"
FT			

FT	Peptide	16. .19	/note= "Spacer peptide"
FT			

FT	Peptide	Δ mol%
FT	Peptide	20.28

	28	/note= "Gonadotrophin releasing hormone epitope"	28
FT	Modified-site		
FT			

FT /note= "Amidated glycine or glycinamide"

AX PN WO200185763-A2.

15-NOV-2001.

XX
PF 04-MAY-2001: 2001WO-US014363.XX
PB 05-MAY-2000: 2000US-020232APXX
PA (APHT-) APHTON CORPXX
PT
Grimes S
Michael J
D
Stevens VC:

XX
DB WPT: 3003-049440/06

xx Novel synthetic immunogen for inducing immune response against
PT gonadotropin releasing hormone, comprises fusion peptide having
PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
PT or its analog.

PS Claim 11: page 8: 43pp: English.

The invention relates to a synthetic immunogen for inducing specific antibodies against Gonadotropin releasing hormone (GnRH) also known as luteinising hormone releasing hormone (LHRH) comprising a fusion peptide which comprises a promiscuous helper T-cell peptide epitope and an immunogenic peptide epitope or its analogue. The synthetic immunogen is useful inducing an immune response against GnRH in an animal subject, and as such is useful as a contraceptive and in the treatment of diseases such as cancer (of the breast, uterus and other gynaecological cancer),

RESULT 100
 AAR44398
 ID AAR44398 standard; peptide; 30 AA.
 XX
 AC AAR44398;
 XX
 DT 08-NOV-1994 (first entry)
 XX
 DE HIV antigen fragment.
 XX
 KW HIV; human immunodeficiency virus; immunisation; monoclonal antibody.
 XX
 OS Human immunodeficiency virus.
 XX
 PN TW208717-A.
 XX
 PD 01-JUL-1993.
 XX
 PF 24-APR-1992; 92TW-00103240.
 XX
 PR 24-APR-1992; 92TW-00103240.
 XX
 PA (CHIN/) CHIN L.
 XX
 PI Chin L;
 XX
 DR WPI; 1993-335491/42.
 XX
 PT Induction of neutralising human monoclonal antibodies against human
 PT immuno-deficiencies - by sepg. peripheral mononuclear cells from blood
 PT using density gradient centrifugation, and treating cells by L-leucyl-L-
 PT leucine methyl ester etc.
 XX
 PS Claim 1; Page; 36pp; Chinese.
 XX
 CC The invention relates to a method of assessing human immunodeficiency
 CC virus and producing human immunodeficiency antibodies by in-vitro
 CC immunisation, which comprises: (a) separating peripheral mononuclear
 CC cells from blood using density gradient centrifugation; (b) treating the
 CC mononuclear cells with L-leucyl-L-leucine methyl ester; and (c) using
 CC the present antigen fragment, which is formed by coupled T and B cells,
 CC in a culture medium of human serum, IL-2 and T cells to effect
 CC cultivation and achieve in vitro immunisation
 XX
 SQ Sequence 30 AA;
 Query Match 100.0%; Score 74; DB 2; Length 30;
 Best Local Similarity 100.0%; Pred. No. 2e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 101
 AAY82632
 ID AAY82632 standard; peptide; 31 AA.
 XX
 AC AAY82632;
 XX
 DT 07-AUG-2000 (first entry)
 XX
 DE Tetanus toxoid T cell epitope and Der pII B cell epitope peptide.
 XX
 KW T cell epitope; B cell epitope; allergy; allergen; antigenic;
 KW anti-allergic; antiaethmatic; anti-inflammatory; dermatological;
 KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
 KW atopic dermatitis; acute urticaria; chronic urticaria;
 KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;
 KW anaphylactic reaction; drug hypersensitivity; allergic reaction.
 XX

OS Dermatophagoides pteronyssinus.
 OS Clostridium tetani.
 XX Synthetic.
 XX WO200006694-A2.
 XX
 PD 10-FEB-2000.
 XX
 PF 20-JUL-1999; 99WO-BE000092.
 XX
 PR 30-JUL-1998; 98EP-00870167.
 XX
 PA (UNIO) UCB SA.
 XX
 PI Saint-Remy J, Jacquemin M;
 XX
 DR WPI; 2000-422470/36.
 XX
 PT New compound for prevention and treatment of allergies comprises at least
 PT one allergen antigenic determinant recognized by a B cell and at least
 PT one antigenic determinant which does not trigger T cell activation.
 XX
 PS Claim 8; Page 35; 50pp; English.
 XX
 CC The present invention describes a compound (I) for the prevention and/or
 CC treatment of allergy. The compound comprises at least one allergen
 CC antigenic determinant (i) recognised by a B cell or an antibody secreted
 CC by a B cell of a non-atopic individual and at least one antigenic
 CC determinant (ii) different from the allergen that triggers T cell
 CC activation. (I) has anti-allergic, antiaethmatic, anti-inflammatory,
 CC dermatological and immunosuppressive activities, and can be used in a
 CC vaccine. (I) may be used in a pharmaceutical or cosmetic medicament to
 CC treat and/or prevent allergies or a disease of allergic origin,
 CC especially hypersensitivities. These include rhinitis, sinusitis,
 CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
 CC urticaria, gastro-intestinal syndromes associated with the ingestion of
 CC food allergens, oro-pharyngeal syndrome, anaphylactic reactions
 CC associated with drug hypersensitivities and/or a mixture of these. The
 CC use of (I) in the treatment of allergic conditions avoids the need for
 CC drug treatment, which often causes undesirable side-effects. Also, prior
 CC art drug therapies alleviate symptoms, but do not influence their causes,
 CC however (I) actually combats the cause of an allergic reaction. The
 CC present sequence represents a specifically claimed compound peptide
 CC sequence from the present invention
 XX
 SQ Sequence 31 AA;
 Query Match 100.0%; Score 74; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. NO. 2.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 102
 AAU11426
 ID AAU11426 standard; peptide; 31 AA.
 XX
 AC AAU11426;
 XX
 DT 12-MAR-2002 (first entry)
 XX
 DE Synthetic immunogen peptide 7.
 XX
 KW Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunominic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.
 XX
 OS Clostridium tetani.

OS Mammalia.
OS Synthetic.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 1. .10
FT FT /note= "Gonadotrophin releasing hormone epitope"
FT Misc-difference 1
FT /label= OTHER
FT /note= "Other= Pyro-glutamic acid or 5-oxo proline"
FT Peptide 11. .16
FT FT /note= "Spacer peptide"
FT Peptide 17. .31
FT FT /note= "Tetanus toxoid sequence (830-844 aa)"
XX
PN WO200185763-A2.
XX
XX 15-NOV-2001.
XX
XX 04-MAY-2001; 2001WO-US014363.
XX
XX 05-MAY-2000; 2000US-0202328P.
XX
XX (APHT-) APHTON CORP.
XX
XX Grimes S, Michaeli D, Stevens VC;
XX
XX WPI; 2002-049440/06.
XX
XX Novel synthetic immunogen for inducing immune response against
PT gonadotropin releasing hormone, comprises fusion peptide having
PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
PT or its analog.
XX
XX Claim 11; Page 10; 43pp; English.
XX
XX The invention relates to a synthetic immunogen for inducing specific
CC antibodies against gonadotropin releasing hormone (GnRH) also known as
CC luteinising hormone releasing hormone, LH(RH) comprising a fusion peptide
CC which comprises a promiscuous helper T-cell peptide epitope and
CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
CC useful inducing an immune response against GnRH in an animal subject, and
CC as such is useful as a contraceptive and in the treatment of diseases
CC such as cancer (of the breast, uterus and other gynaecological cancer),
CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
CC prostate cancer. The immunogen is effective in eliciting high and
CC specific anti-GnRH antibody titres. The present sequence is a synthetic
CC immunogen of the invention
XX
XX Sequence 31 AA;
SQ

Query Match 100.0%; Score 74; DB 5; Length 31;
Best Local Similarity 100.0%; Pred. No. 2.1e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
|||
Db 17 QYIKANSKFIGITEL 31

RESULT 103
AAY82636
ID AAY82636 standard; peptide; 32 AA.
XX
AC AAY82636;
XX
XX 07-AUG-2000 (first entry)
XX
XX Tetanus toxoid T cell epitope and Der pII B cell epitope peptide.

DE T cell epitope; B cell epitope; allergy; allergen; antigenic;
KW antiallergic; antiasthmatic; antiinflammatory; dermatological;
KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;
XX

KW atopic dermatitis; acute urticaria; chronic urticaria;
KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;
KW anaphylactic reaction; drug hypersensitivity; allergic reaction.
XX

OS Dermatophagoides pteronyssinus.
OS Clostridium tetani.
OS Synthetic.
XX

PN WO200006694-A2.

XX 10-FEB-2000.

XX 20-JUL-1999; 99WO-BE000092.

XX 30-JUL-1998; 98EP-00870167.

XX (UNIO) UCB SA.

XX Saint-Remy J, Jacquemin M;

XX WPI; 2000-422470/36.

XX New compound for prevention and treatment of allergies comprises at least
PT one allergen antigenic determinant recognized by a B cell and at least
PT one antigenic determinant which does not trigger T cell activation.
XX

PS Claim 8; Page 35; 50pp; English.

XX The present invention describes a compound (I) for the prevention and/or
CC treatment of allergy. The compound comprises at least one allergen
CC antigenic determinant (i) recognised by a B cell or an antibody secreted
CC by a B cell of a non-atopic individual and at least one antigenic
CC determinant (ii) different from the allergen that triggers T cell
CC activation. (I) has antiallergic, antiasthmatic, antiinflammatory,
CC dermatological and immunosuppressive activities, and can be used in a
CC vaccine. (I) may be used in a pharmaceutical or cosmetic medicament to
CC treat and/or prevent allergies or a disease of allergic origin,
CC especially hypersensitivities. These include rhinitis, sinusitis,
CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
CC urticaria, gastro-intestinal syndromes associated with the ingestion of
CC food allergens, oro-pharyngeal syndrome, anaphylactic reactions
CC associated with drug hypersensitivities and/or a mixture of these. The
CC use of (I) in the treatment of allergic conditions avoids the need for
CC drug treatment, which often causes undesirable side-effects. Also, prior
CC art drug therapies alleviate symptoms, but do not influence their causes,
CC however (I) actually combats the cause of an allergic reaction. The
CC present sequence represents a specifically claimed compound peptide
CC sequence from the present invention
XX
XX Sequence 32 AA;
SQ

Query Match 100.0%; Score 74; DB 3; Length 32;
Best Local Similarity 100.0%; Pred. No. 2.2e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
|||
Db 1 QYIKANSKFIGITEL 15

RESULT 104
ADP02886
ID ADP02886 standard; peptide; 36 AA.
XX
AC ADP02886;
XX
XX 12-AUG-2004 (first entry)
XX
XX Tetanus toxoid amino acids 830-844 and 947-967for fusion protein.

DE antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX

XX OS Clostridium tetani.
 XX PN WO2004041067-A2.
 XX PD 21-MAY-2004.
 XX PF 31-OCT-2003; 2003WO-US034527.
 XX PR 01-NOV-2002; 2002US-0423012P.
 XX PA (ELAN-) ELAN PHARM INC.
 XX PA (REGC) UNIV CALIFORNIA.
 XX PI Schenk DB, Masliah E;
 XX PD WPI; 2004-411388/38.
 XX PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX PS Disclosure; SEQ ID NO 19; 78pp; English.
 XX CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a linear fusion of
 CC the tetanus toxoid peptide corresponding to amino acid 830-844 and 947-
 CC 967 used in the method of the invention.
 XX SQ Sequence 36 AA;
 Query Match 100.0%; Score 74; DB 8; Length 36;
 Best Local Similarity 100.0%; Pred. No. 2.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 1 QYIKANSKFIGITEL 15
 RESULT 105
 AAR65389
 ID AAR65389 standard; peptide; 37 AA.
 AC AAR65389;
 XX 25-MAR-2003 (revised)
 DT 21-SEP-1995 (first entry)
 DE Universal immunostimulator having GG spacers.
 XX Helper T cell epitope; universal immune stimulator; invasin; haptin;
 KW tetanus toxin.
 KW Synthetic.
 OS Key Location/Qualifiers
 XX Key 3..19
 FH Domain /note= "tetanus toxin helper T cell epitope"
 FT Domain 22..37
 FT /note= "invasin domain"

PN WO9425060-A1.
 XX 10-NOV-1994.
 XX 28-APR-1994; 94WO-US004832.
 XX 27-APR-1993; 93US-00057166.
 XX 14-APR-1994; 94US-00229275.
 XX (LADD/) LADD A E.
 XX (WANG/) WANG C Y.
 XX (ZAMB/) ZAMB T.
 PI Ladd AE, Wang CY, Zamb T;
 XX WPI; 1994-357910/44.
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.
 XX Disclosure; Page 95; 213pp; English.
 XX CC Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein haptin containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and haptin components. When the
 CC haptin is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence is an example of a
 CC -GG-Th-GG-invasin immune stimulator to which a haptin can be bonded.
 CC (Updated on 25-MAR-2003 to correct PN field.)
 XX SQ Sequence 37 AA;
 Query Match 100.0%; Score 74; DB 2; Length 37;
 Best Local Similarity 100.0%; Pred. No. 2.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 5 QYIKANSKFIGITEL 19
 RESULT 106
 AAR65383
 ID AAR65383 standard; peptide; 37 AA.
 AC AAR65383;
 XX 25-MAR-2003 (revised)
 DT 21-SEP-1995 (first entry)
 DE Universal immunostimulator having GG spacers.
 XX Helper T cell epitope; universal immune stimulator; invasin; haptin;
 KW tetanus toxin.
 KW Synthetic.
 OS Key Location/Qualifiers
 XX Key 1..16
 FH Domain /note= "invasin domain"
 FT Domain 19..35
 FT /note= "tetanus toxin helper T cell epitope"
 XX WO9425060-A1.
 XX 10-NOV-1994.

XX PF 28-APR-1994; 94WO-US004832.
 XX PR 27-APR-1993; 93US-00057166.
 XX PR 14-APR-1994; 94US-00229275.
 XX (LADD/) LADD A E.
 XX (WANG/) WANG C Y.
 XX (ZAMB/) ZAMB T.
 XX Ladd AE, Wang CY, Zamb T;
 XX WPI; 1994-357910/44.
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 XX suppress LHRH activity in males and females.
 XX Disclosure; Page 95; 213pp; English.
 XX Synthetic immunogenic peptides are provided in which a universal immune
 XX stimulator is linked to a peptide or protein hapten containing B cell
 XX and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 XX potent immune responses to the coupled peptide or protein. The stimulator
 XX consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 XX immune response to the coupled peptide in members of a heterogeneous
 XX population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 XX sequence from the invasive protein of Yersinia. Spacer amino acid
 XX sequences (e.g. Gly-Gly) can be provided between the invasive and Th
 XX domains and between the immune stimulator and hapten components. When the
 XX hapten is LHRH, then optionally the invasive domain can be omitted from
 XX the immune stimulator component. The present sequence is an example of an
 XX invasive-GG-Th-GG- immune stimulator to which a hapten can be bonded.
 XX (Updated on 25-MAR-2003 to correct PN field.)
 XX Sequence 37 AA;
 XX
 Query Match 100.0%; Score 74; DB 2; Length 37;
 Best Local Similarity 100.0%; Pred. No. 2.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 21 QYIKANSKFIGITEL 35
 XX
 RESULT 107
 AAB49076
 ID AAB49076 standard; peptide; 43 AA.
 XX
 AC AAB49076;
 XX
 DT 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 XX
 DE Amyloid beta/tetanus toxoid immunogenic fusion peptide, SEQ ID NO:12.
 XX
 KW Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX
 XX Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 XX
 XX WO200072876-A2.
 XX
 XX 07-DEC-2000.
 XX
 XX 01-JUN-2000; 2000WO-US015239.
 XX

XX PR 01-JUN-1999; 99US-0137010P.
 XX (NEUR-) NEURALAB LTD.
 XX Schenk DB;
 XX WPI; 2001-070921/08.
 XX Pharmaceutical composition comprising immunogen against amyloid component
 XX such as fibril peptide or protein, or antibody against amyloid component
 XX useful for treating amyloid diseases or amyloidoses.
 XX Disclosure; Page 45; 140pp; English.
 XX The invention relates to a novel pharmaceutical composition for
 XX preventing or treating a disease characterised by amyloid fibril deposits
 XX (amyloid plaques) in a patient. The pharmaceutical composition comprises
 XX an agent that will induce an immune response against an amyloid
 XX component, or an antibody or antibody fragment that binds to an amyloid
 XX component. The invention also relates to a method for determining the
 XX prognosis of a patient undergoing treatment for an amyloid disorder which
 XX involves measuring a patient serum amount of immunoreactivity against a
 XX selected amyloid component. A patient serum immunoreactivity of at least
 XX four times a base line serum immunoreactivity control level indicates a
 XX prognosis of improved status with respect to the disorder. The
 XX pharmaceutical compositions of the invention are useful for treating a
 XX wide variety of disorders characterised by amyloid fibril deposition in a
 XX patient. Such disorders include Alzheimer's disease characterised by
 XX amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 XX islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 XX amyloidosis associated with systemic inflammatory diseases (e.g.,
 XX rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 XX fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 XX amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 XX fibrils derived from transthyretin (TTR); transmissible spongiform
 XX encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 XX prion protein deposits; and beta-2-microglobulin deposits which form as a
 XX result of long term haemodialysis treatment. The present sequence
 XX represents an immunogenic fusion protein comprising an amyloid beta
 XX peptide fused to a universal T-cell epitope which may be used in a
 XX composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 XX 2003 to standardise OS field)
 XX Sequence 43 AA;
 Query Match 100.0%; Score 74; DB 4; Length 43;
 Best Local Similarity 100.0%; Pred. No. 3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 8 QYIKANSKFIGITEL 22
 XX
 RESULT 108
 AAB46177
 ID AAB46177 standard; peptide; 43 AA.
 XX
 AC AAB46177;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid 830-844 + 947-967 epitope AN90542.
 XX
 XX Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 XX WO200072880-A2.
 XX

PD 07-DEC-2000.
XX
PF 26-MAY-2000; 2000WO-US014810.
XX
PR 28-MAY-1999; 99US-00322289.
XX
PA (NEUR-) NEURALAB LTD.
XX
PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
XX
XX WPI; 2001-032104/04.
XX
XX Preventing or treating a disease associated with amyloid deposits,
PT especially Alzheimer's disease, comprises administering amyloid specific
PT antibody.
XX
XX Disclosure; Page 31; 143pp; English.
XX
XX This invention describes a novel method of preventing or treating a
CC disease associated with amyloid deposits of amyloid precursor protein
CC (APP) Abeta fragments in the brain of a patient, which comprises
CC administering to the patient: (a) an antibody that binds to Abeta, the
CC antibody binds to an amyloid deposit and induces a clearing response (Fc
CC receptor mediated phagocytosis) against it (b) a polypeptide containing
CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
CC that induces an immunogenic response against residues 1-3 to 7-11 of
CC Abeta. The products of the invention have nootropic and neuroprotective
CC activity. The method is also useful for monitoring a course of treatment
CC being administered to a patient e.g. active and passive immunization. The
CC methods are useful for prophylactic and therapeutic treatment of
CC Alzheimer's disease
XX
XX Sequence 43 AA;
SQ

Query Match 100.0%; Score 74; DB 4; Length 43;
Best Local Similarity 100.0%; Pred. No. 3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | | |
DB 8 QYIKANSKFIGITEL 22

RESULT 109
ADP02902
ID ADP02902 standard; peptide; 43 AA.
XX
AC ADP02902;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #14 for treating neurodegenerative disorder.
XX
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
XX aggregation; brain; immunogenic response; beta-amyloid;
XX Parkinson's disease.
XX
XX Synthetic.
XX
XX WO2004041067-A2.
XX
XX 21-MAY-2004.
XX
XX 31-OCT-2003; 2003WO-US034527.
XX
XX 01-NOV-2002; 2002US-0423012P.
XX
XX (ELAN-) ELAN PHARM INC.
XX (REGC) UNIV CALIFORNIA.
XX
XX Schenk DB, Masliah E;
XX
XX WPI; 2004-411388/38.
XX
XX

XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
XX beta-amyloid.
XX
XX Disclosure; SEQ ID NO 35; 78pp; English.
XX
XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.
XX
XX Sequence 43 AA;
SQ

Query Match 100.0%; Score 74; DB 8; Length 43;
Best Local Similarity 100.0%; Pred. No. 3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
| | | | | | | | | | | | | | | |
DB 8 QYIKANSKFIGITEL 22

RESULT 110
AAB49090
ID AAB49090 standard; protein; 44 AA.
XX
AC AAB49090;
XX
XX 11-SEP-2003 (revised)
XX 27-MAR-2001 (first entry)
XX
XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:26.
XX
XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
XX antibody; vaccine; Alzheimer's disease; type 2 diabetes;
XX reactive system amyloidosis; systemic senile amyloidosis;
XX familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
XX Creutzfeld-Jakob disease; Kuru;
XX haemodialysis-associated beta-2-microglobulin deposition;
XX amyloid beta peptide; universal T-cell epitope; neuroprotective.
XX
XX Homo sapiens.
XX OS Clostridium tetani.
XX OS Chimeric.
XX
XX WO200072876-A2.
XX
XX 07-DEC-2000.
XX
XX 01-JUN-2000; 2000WO-US015239.
XX
XX 01-JUN-1999; 99US-0137010P.
XX
XX (NEUR-) NEURALAB LTD.
XX
XX Schenk DB;
XX
XX WPI; 2001-070921/08.
XX
XX Pharmaceutical composition comprising immunogen against amyloid component
PT such as fibril peptide or protein, or antibody against amyloid component
PT useful for treating amyloid diseases or amyloidoses.
XX
XX

XX PS Disclosure; Page 46; 140pp; English.

XX CC The invention relates to a novel pharmaceutical composition for

XX CC preventing or treating a disease characterised by amyloid fibril deposits

XX CC (amyloid plaques) in a patient. The pharmaceutical composition comprises

XX CC an agent that will induce an immune response against an amyloid

XX CC component, or an antibody or antibody fragment that binds to an amyloid

XX CC component. The invention also relates to a method for determining the

XX CC prognosis of a patient undergoing treatment for an amyloid disorder which

XX CC involves measuring a patient serum amount of immunoreactivity against a

XX CC selected amyloid component. A patient serum immunoreactivity of at least

XX CC four times a base line serum immunoreactivity control level indicates a

XX CC prognosis of improved status with respect to the disorder. The

XX CC pharmaceutical compositions of the invention are useful for treating a

XX CC wide variety of disorders characterised by amyloid fibril deposition in a

XX CC patient. Such disorders include Alzheimer's disease characterised by

XX CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by

XX CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic

XX CC amyloidosis associated with systemic inflammatory diseases (e.g.,

XX CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA

XX CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile

XX CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR

XX CC fibrils derived from transthyretin (TTR); transmissible spongiform

XX CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by

XX CC prion protein deposits; and beta-2-microglobulin deposits which form as a

XX CC result of long term haemodialysis treatment. The present sequence

XX CC represents an immunogenic fusion protein comprising an amyloid beta

XX CC peptide fused to a universal T-cell epitope which may be used in a

XX CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-

XX CC 2003 to standardise OS field)

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 74; DB 4; Length 44;

Best Local Similarity 100.0%; Pred. No. 3.1e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 8 QYIKANSKFIGITEL 22

|||||

RESULT 111

AAB46194

ID AAB46194 standard; peptide; 44 AA.

XX CC AAB46194;

XX AC

XX DT 04-APR-2001 (first entry)

XX DE Tetanus toxoid epitope fusion construct #14.

XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;

XX KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;

XX KW amyloid precursor protein; Alzheimer's disease.

XX OS Clostridium tetani.

XX PN WO200072880-A2.

XX PD 07-DEC-2000.

XX PF 26-MAY-2000; 2000WO-US014810.

XX PR 28-MAY-1999; 99US-00322289.

XX PA (NEUR-) NEURALAB LTD.

XX PI Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX DR WPI; 2001-0322104/04.

PT Preventing or treating a disease associated with amyloid deposits,

PT especially Alzheimer's disease, comprises administering amyloid specific

PT antibody.

XX PS Disclosure; Page 32; 143pp; English.

XX CC This invention describes a novel method of preventing or treating a

XX CC disease associated with amyloid deposits of amyloid precursor protein

XX CC (APP) Abeta fragments in the brain of a patient, which comprises

XX CC administering to the patient: (a) an antibody that binds to Abeta, the

XX CC antibody binds to an amyloid deposit and induces a clearing response (Fc

XX CC receptor mediated phagocytosis) against it (b) a polypeptide containing

XX CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent

XX CC that induces an immunogenic response against residues 1-3 to 7-11 of

XX CC Abeta. The products of the invention have neurotropic and neuroprotective

XX CC activity. The method is also useful for monitoring a course of treatment

XX CC being administered to a patient e.g. active and passive immunization. The

XX CC methods are useful for prophylactic and therapeutic treatment of

XX CC Alzheimer's disease

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 74; DB 4; Length 44;

Best Local Similarity 100.0%; Pred. No. 3.1e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 8 QYIKANSKFIGITEL 22

|||||

RESULT 112

ADP02917

ID ADP02917 standard; peptide; 44 AA.

XX AC ADP02917;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #29 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;

XX KW aggregation; brain; immunogenic response; beta-amyloid;

XX KW Parkinson's disease.

XX OS Synthetic.

XX PN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.

XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized

XX PT by Lewy bodies or alpha-synuclein aggregation in brain by administering

XX PT agent that induces immunogenic response against alpha-synuclein and/or

XX PT beta-amyloid.

XX PS Disclosure; SEQ ID NO 50; 78pp; English.

XX CC The invention relates to a method of preventing (M1) or treating a

XX CC disease characterized by Lewy bodies or alpha-synuclein aggregation in

XX CC the brain, by administering an agent that induces an immunogenic response

XX CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is

CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 74; DB 8; Length 44;
 Best Local Similarity 100.0%; Pred. No. 3.1e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 QYIKANSKFIGITEL 15
 Db 8 QYIKANSKFIGITEL 22
 |||||

RESULT 113

AAU11430
 ID AAU11430 standard; peptide; 46 AA.

XX AC AAU11430;

XX DT 12-MAR-2002 (first entry)

XX DE Synthetic immunogen peptide 11.

XX Gonadotropin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX Clostridium tetani.

OS Mammalia.

OS Synthetic.

OS Chimeric.

XX FH Key Location/Qualifiers

FT Peptide 1. .10

FT /note= "Gonadotropin releasing hormone epitope (1. .10
 aa)"

FT Misc-difference 1

FT /label= OTHER

FT /note= "Other= Pyro-glutamic acid or 5-oxo proline"

FT Peptide 11. .16

FT /note= "Spacer peptide"

FT Peptide 17. .31

FT /note= "Tetanus toxoid (830-844 aa)"

FT Peptide 32. .37

FT /note= "Spacer peptide"

FT Peptide 38. .46

FT /note= "Gonadotropin releasing hormone epitope (2-10
 aa)"

FT Modified-site 46

FT /note= "Amidated glycine or glycine amide"

XX WO200185763-A2.

XX PD 15-NOV-2001.

XX PF 04-MAY-2001; 2001WO-US014363.

XX PR 05-MAY-2000; 2000US-0202328P.

XX PA (APHT-) APHTON CORP.

XX PI Grimes S, Michaeli D, Stevens VC;

XX

DR WPI; 2002-049440/06.

XX Novel synthetic immunogen for inducing immune response against
 PT gonadotropin releasing hormone, comprises fusion peptide having
 PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 PT or its analog.

PS Claim 11; Page 12; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone, LHRH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and
 CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is a synthetic
 CC immunogen of the invention

XX SQ Sequence 46 AA;

Query Match 100.0%; Score 74; DB 5; Length 46;

Best Local Similarity 100.0%; Pred. No. 3.2e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 QYIKANSKFIGITEL 15

Db 17 QYIKANSKFIGITEL 31

|||||

RESULT 114

AAU62723

ID AAR62723 standard; peptide; 47 AA.

XX AC AAR62723;

XX DT 25-MAR-2003 (revised)

XX DT 17-SEP-1995 (first entry)

XX DE LHRH-containing immunogenic peptide.

XX Helper T cell epitope; universal immune stimulator; invasin; haptan;
 KW vaccine; LHRH; luteinising hormone releasing hormone; prostate;
 KW androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.

XX OS Synthetic.

XX FH Key Location/Qualifiers

FT Domain 1. .16

FT /note= "invasin domain"

FT Domain 19. .35

FT /note= "tetanus toxin helper T cell epitope"

FT Domain 38. .47

FT /note= "LHRH haptan"

XX WO9425060-A1.

XX PD 10-NOV-1994.

XX PF 28-APR-1994; 94WO-US004832.

XX PR 27-APR-1993; 93US-00057166.

XX PR 14-APR-1994; 94US-00229275.

XX PA (LADD/) LADD A E.

XX PA (WANG/) WANG C Y.

XX PA (ZAMB/) ZAMB T.

XX Ladd AE, Wang CY, Zamb T;

XX

DR WPI; 1994-357910/44.
 XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.
 XX
 XX Claim 8; Page 88; 213pp; English.
 XX
 CC Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasive protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasive and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC hapten is LHRH, then optionally the invasive domain can be omitted from
 CC the immune stimulator component. The present sequence represents an LHRH-
 CC containing immunogenic peptide as above which can be used as a potent
 CC vaccine for treating e.g. prostatic hyperplasia, androgen-dependent
 CC carcinoma, prostatic carcinoma, testicular carcinoma, endometriosis,
 CC benign uterine tumours, recurrent functional ovarian cysts, (severe)
 CC premenstrual syndrome or oestrogen-dependent breast cancer, or for
 CC induction of infertility. (Updated on 25-MAR-2003 to correct PN field.)
 XX
 SQ Sequence 47 AA;
 Query Match 100.0%; Score 74; DB 2; Length 47;
 Best Local Similarity 100.0%; Pred. No. 3.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 21 QYIKANSKFIGITEL 35
 RESULT 115
 ID AAW06131 standard; peptide; 50 AA.
 AC AAW06131;
 XX
 XX 07-FEB-1997 (first entry)
 DT
 DE Anti-cholesterol ester transfer multivalent vaccine peptide.
 XX
 KW Cholesteryl ester transfer protein; CETP; antigen; vaccine;
 KW cardiovascular disease; atherosclerosis.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 1
 FT /note= "C-terminal Cys residue is present for use in
 FT linking the peptide to itself or other molecules"
 FT Region 2..15
 FT /label= T-cell epitope
 FT /note= "T-cell epitope comprises amino acids 830-843 of
 FT tetanus toxoid protein"
 FT Region 16..34
 FT /label= B-cell epitope
 FT /note= "B-cell epitope comprises amino acids 349-367 of
 FT human CETP"
 FT Region 35..50
 FT /label= B-cell epitope
 FT /note= "B-cell epitope comprises the C-terminal 16 amino
 FT acids of human CETP, involved in neutral lipid binding or
 FT transfer activity"
 XX
 PN W09634888-A1.
 XX
 PD 07-NOV-1996.

XX
 PF 01-MAY-1996; 96WO-US006147.
 XX
 PR 01-MAY-1995; 95US-00432483.
 XX
 XX (TCEL-) T CELL SCI INC.
 XX
 XX Rittershaus CW, Thomas LJ;
 XX
 DR WPI; 1996-506103/50.
 XX
 CC Cholesteryl ester transfer protein B cell epitope linked to T cell
 CC epitope - used to generate vaccine to regulate CETP activity for
 CC decreasing the risk of developing a cardiovascular disease e.g.
 CC atherosclerosis.
 PT
 PT Disclosure; Page 7; 72pp; English.
 XX
 PS A multivalent vaccine comprises an immunogenic helper T-cell epitope of
 CC tetanus toxoid protein covalently linked to the B-cell epitopes of human
 CC cholesteryl ester transfer protein (CETP) (see also AAW06127). The
 CC vaccine elicits an immune response against endogenous CETP activity, and
 CC is used to treat or prevent a cardiovascular disease, such as
 CC atherosclerosis
 XX
 SQ Sequence 50 AA;
 Query Match 100.0%; Score 74; DB 2; Length 50;
 Best Local Similarity 100.0%; Pred. No. 3.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 2 QYIKANSKFIGITEL 16
 RESULT 116
 ID AAB49091
 XX AAB49091 standard; protein; 51 AA.
 XX
 AC AAB49091;
 XX
 XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 DE
 DE Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:27.
 XX
 KW Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX
 XX Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 XX
 XX W0200072876-A2.
 XX
 XX 07-DEC-2000.
 PD
 PF 01-JUN-2000; 2000WO-US015239.
 XX
 PR 01-JUN-1999; 99US-0137010P.
 XX
 XX (NEUR-) NEURALAB LTD.
 XX
 XX Schenk DB;
 XX
 XX WPI; 2001-070921/08.
 XX

PT Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 46; 140pp; English.

CC The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeldt-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 51 AA;

Query Match 100.0%; Score 74; DB 4; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 8 QYIKANSKFIGITEL 22

RESULT 117

AAB46195
 ID AAB46195 standard; peptide; 51 AA.

XX AC AAB46195;

XX DT 04-APR-2001 (first entry)

XX DE Tetanus toxoid epitope fusion construct #15.

XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW FC receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX OS Clostridium tetani.

XX PN WO2000072880-A2.

XX PD 07-DEC-2000.

XX PF 26-MAY-2000; 2000WO-US014810.

XX PR 28-MAY-1999; 99US-00322289.

XX PA (NEUR-) NEURALAB LTD.

XX PI Schenk DB, Bard F, Vasquez NJ, Vednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits.
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (FC
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 51 AA;

Query Match 100.0%; Score 74; DB 4; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 8 QYIKANSKFIGITEL 22

RESULT 118

ADIS7373

ID ADIS7373 standard; peptide; 51 AA.

XX AC ADIS7373;

XX DT 06-MAY-2004 (first entry)

XX DE Synthetic human chorionic gonadotropin peptide antigen CTP37-TT2.

XX KW Vaccine; drug delivery; encapsulation; human chorionic gonadotropin; HCG;
 KW tetanus toxoid; contraceptive.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX OS Chimeric.

XX PH Key Location/Qualifiers

XX FT Region 2..16

XX FT /label= TT2

XX FT Region 17..51

XX FT /label= CTP37

XX PN WO2004005325-A2.

XX PD 15-JAN-2004.

XX PF 10-JUL-2003; 2003WO-US021861.

XX PR 10-JUL-2002; 2002US-0394967P.

XX PA (OHIS) UNIV OHIO STATE RES FOUND.

XX PI Cui C, Schwendeman SP, Stevens VC;

XX DR WPI; 2004-142960/14.

XX Enhancing immunogenic response in mammalian subject by administering
 PT biodegradable polymeric delivery system comprising one or more antigens

PT and one or more basic additives to mammalian subject.
 XX
 PS Example 1; Page 12; 39pp; English.
 XX
 CC A claimed method of enhancing an immunogenic response in a mammal
 CC comprises administering a biodegradable polymeric delivery system
 CC comprising one or more antigens and one or more basic additives. In a
 CC highly preferred embodiment, the basic additive is MgCO₃ and the
 CC biodegradable polymeric delivery system is a poly(lactide-co-glycolide)
 CC (PLGA) microparticle. The present sequence is that of the CTP37-TT2
 CC antigen. This synthetic antigen comprises a B-cell epitope from the C-
 CC terminal portion of the beta chain of human chorionic gonadotropin (HCG
 CC residues 109-145) and a universal or promiscuous T-cell epitope from
 CC tetanus toxoid (residues 830-844, designated as TT2). The peptide
 CC includes an N-terminal Cys residue to facilitate further conjugation via
 CC a thiol group without altering the B- and T-cell epitopes. In an example
 CC from the invention, the immunogenicity of CTP37-TT2 peptide antigen was
 CC shown to be enhanced by encapsulation or surface-conjugation in PLGA
 CC microparticles. Combination of surface-conjugated and encapsulated CTP37-
 CC TT2 peptide antigen provided a long-lasting high anti-HCG antibody
 CC response after a single dose. The stability of the encapsulated antigen
 CC more closely mimicked stability in wetted solid-state than stability in
 CC dilute solution. This may provide stability guidelines for handling the
 CC antigen in solution and for its potential use as a slow-release birth
 CC control vaccine.
 XX
 SQ Sequence 51 AA;
 Query Match 100.0%; Score 74; DB 8; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 2 QYIKANSKFIGITEL 16
 RESULT 119
 ADP02918
 ID ADP02918 standard; peptide; 51 AA.
 AC ADP02918;
 XX
 XX 12-AUG-2004 (first entry)
 DT
 DE Fusion protein #30 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 XX WO2004041067-A2.
 PN
 XX 21-MAY-2004.
 PD
 XX 31-OCT-2003; 2003WO-US034527.
 PF
 XX 01-NOV-2002; 2002US-0423012P.
 PR
 XX (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 PA
 XX Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 DR
 XX Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX

PS Disclosure; SEQ ID NO 51; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 51 AA;
 Query Match 100.0%; Score 74; DB 8; Length 51;
 Best Local Similarity 100.0%; Pred. No. 3.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db |||||
 8 QYIKANSKFIGITEL 22
 RESULT 120
 ADL90093
 ID ADL90093 standard; protein; 54 AA.
 XX
 AC ADL90093;
 XX
 XX 17-JUN-2004 (first entry)
 DT
 DE Anti-melanoma drug self epitope, SEQ ID 33.
 XX
 KW Immune response; immunoglobulin; Ig; anti-melanoma; cytostatic.
 XX
 OS Unidentified.
 XX
 XX WO2004027049-A2.
 PN
 XX 01-APR-2004.
 PD
 XX 18-SEP-2003; 2003WO-US030189.
 PF
 XX 20-SEP-2002; 2002US-0412219P.
 PR
 XX 14-MAR-2003; 2003WO-US007995.
 XX
 XX (ASTR-) ASTRAL INC.
 PA
 XX Bot A, Wang L, Smith D, Phillips B;
 PI WPI; 2004-295415/27.
 XX
 DR
 XX Generating an immune response to an antigen, useful for generating
 PT desired T cell responses comprises administering an immunoglobulin having
 PT one peptide epitope of the antigen attached to the immunoglobulin.
 XX
 XX Disclosure; Fig 1K; 154pp; English.
 PS
 XX The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to the patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX
 XX Sequence 54 AA;
 SQ
 Query Match 100.0%; Score 74; DB 8; Length 54;

Best Local Similarity 100.0%; Pred. No. 3.8e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 1 QYIKANSKFIGITEL 15

RESULT 121

ADP02916
ID ADP02916 standard; peptide; 56 AA.

AC ADP02916;
XX
XX 12-AUG-2004 (first entry)
XX
XX Fusion protein #28 for treating neurodegenerative disorder.
XX
XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.
XX
XX Synthetic.

OS
XX WO2004041067-A2.

PN
XX 21-MAY-2004.

XX
XX 31-OCT-2003; 2003WO-US034527.

PF
XX 01-NOV-2002; 2002US-0423012P.

PR
XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.

PA
XX Schenk DB, Masliah E;

XX
XX WPI; 2004-411388/38.

XX
XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.

PS Disclosure; SEQ ID NO 49; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.

XX
SQ Sequence 56 AA;

Query Match 100.0%; Score 74; DB 8; Length 56;
Best Local Similarity 100.0%; Pred. No. 4e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 22 QYIKANSKFIGITEL 36

RESULT 122

ADM06902

ID ADM06902 standard; peptide; 64 AA.

XX
AC ADM06902;

XX
XX 17-JUN-2004 (first entry)

DT
XX Mature rat ghrelin with added epitopes (peptide 3), SEQ ID NO:15.
XX
XX Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
KW immunomodulator; vulnery; vaccine; rat; epitope.

XX
XX Rattus sp.

OS Synthetic.

XX
XX WO2004024183-A1.

XX
XX 25-MAR-2004.

XX
XX 12-SEP-2003; 2003WO-DK000592.

XX
XX 12-SEP-2002; 2002DK-00001345.

PR
XX 12-SEP-2002; 2002US-0410164P.

XX
XX (PHAR-) PHARMEXA AS.

XX
XX Bovine TEG, Klysner S;

XX
XX WPI; 2004-329403/30.

XX Immunizing against autologous ghrelin in animals e.g. human beings,
PT useful for treating obesity, by presenting ghrelin polypeptide, its
PT subsequence or analog, to animal's immune system, for producing
PT antibodies against ghrelin.
XX
XX Example 1; SEQ ID NO 15; 83pp; English.

XX The invention relates to a method for immunising animals (including
CC humans) against autologous ghrelin. The method involves presenting a
CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
CC system, thereby inducing the production of antibodies against the
CC animal's autologous ghrelin. The invention also relates to immunogenic
CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
CC the invention; vectors and host cells comprising this nucleic acid; a
CC method of identifying a modified ghrelin polypeptide capable of inducing
CC antibodies against unmodified autologous ghrelin; and use of immunogenic
CC compositions of the invention. The method of the invention is useful for
CC treating, preventing or ameliorating obesity or other conditions
CC characterised by excess body fat deposits by downregulating ghrelin to
CC such an extent that the total amount of body fat is significantly
CC decreased. The method may also be used for upregulating ghrelin for the
CC treatment, prevention or amelioration of anorexia or cachexia. The method
CC may also be used for treating wound or burns, in adjuvant therapy for in
CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
CC related cancers. The present sequence represents a ghrelin analogue
CC comprising mature rat ghrelin with added epitopes used in an example of
CC the invention.

XX
SQ Sequence 64 AA;

Query Match 100.0%; Score 74; DB 8; Length 64;
Best Local Similarity 100.0%; Pred. No. 4.6e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 1 QYIKANSKFIGITEL 15

RESULT 123

ADM06904
ID ADM06904 standard; peptide; 68 AA.

XX AC ADM06904;

XX DT 17-JUN-2004 (first entry)

XX DE Mature ghrelin with added epitopes (peptide 5), SEQ ID NO:17.

XX KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
XX KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
XX KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
XX KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
XX KW immunomodulator; vulnery; vaccine; epitope.

OS Synthetic.
OS Unidentified.

XX WO2004024183-A1.

XX PD 25-MAR-2004.

XX PF 12-SEP-2003; 2003WO-DK000592.

XX PR 12-SEP-2002; 2002DK-00001345.

XX PR 12-SEP-2002; 2002US-0410164P.

XX PA (PHAR-) PHARMEXA AS.

XX PI Boving TEG, Klysner S;

XX PI WPI; 2004-329403/30.

XX PT Immunizing against autologous ghrelin in animals e.g. human beings,
PT useful for treating obesity, by presenting ghrelin polypeptide, its
PT subsequence or analog, to animal's immune system, for producing
PT antibodies against ghrelin.

XX PS Example 1; SEQ ID NO 17; 83pp; English.

XX CC The invention relates to a method for immunising animals (including
CC humans) against autologous ghrelin. The method involves presenting a
CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
CC system, thereby inducing the production of antibodies against the
CC animal's autologous ghrelin. The invention also relates to immunogenic
CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
CC the invention; vectors and host cells comprising this nucleic acid; a
CC method of identifying a modified ghrelin polypeptide capable of inducing
CC antibodies against autologous ghrelin; and use of immunogenic
CC compositions of the invention. The method of the invention is useful for
CC treating, preventing or ameliorating obesity or other conditions
CC characterised by excess body fat deposits by downregulating ghrelin to
CC such an extent that the total amount of body fat is significantly
CC decreased. The method may also be used for upregulating ghrelin for the
CC treatment, prevention or amelioration of anorexia or cachexia. The method
CC may also be used for treating wound or burns, in adjuvant therapy for in
CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
CC related cancers. The present sequence represents a ghrelin analogue
CC comprising mature ghrelin with added epitopes used in an example of the
CC invention.

XX SQ Sequence 68 AA;

Query Match 100.0%; Score 74; DB 8; Length 68;
Best Local Similarity 100.0%; Pred. No. 4.9e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 3 QYIKANSKFIGITEL 17

RESULT 124

ADM06903

XX ID ADM06903 standard; peptide; 68 AA.

XX AC ADM06903;

XX DT 17-JUN-2004 (first entry)

XX DE Mature ghrelin with added epitopes (peptide 4), SEQ ID NO:16.

XX KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
XX KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
XX KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
XX KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
XX KW immunomodulator; vulnery; vaccine; epitope.

OS Synthetic.

OS Unidentified.

XX WO2004024183-A1.

XX PD 25-MAR-2004.

XX PF 12-SEP-2003; 2003WO-DK000592.

XX PR 12-SEP-2002; 2002DK-00001345.

XX PR 12-SEP-2002; 2002US-0410164P.

XX PA (PHAR-) PHARMEXA AS.

XX PI Boving TEG, Klysner S;

XX PI WPI; 2004-329403/30.

XX PT Immunizing against autologous ghrelin in animals e.g. human beings,
PT useful for treating obesity, by presenting ghrelin polypeptide, its
PT subsequence or analog, to animal's immune system, for producing
PT antibodies against ghrelin.

XX PS Example 1; SEQ ID NO 16; 83pp; English.

XX CC The invention relates to a method for immunising animals (including
CC humans) against autologous ghrelin. The method involves presenting a
CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
CC system, thereby inducing the production of antibodies against the
CC animal's autologous ghrelin. The invention also relates to immunogenic
CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
CC the invention; vectors and host cells comprising this nucleic acid; a
CC method of identifying a modified ghrelin polypeptide capable of inducing
CC antibodies against autologous ghrelin; and use of immunogenic
CC compositions of the invention. The method of the invention is useful for
CC treating, preventing or ameliorating obesity or other conditions
CC characterised by excess body fat deposits by downregulating ghrelin to
CC such an extent that the total amount of body fat is significantly
CC decreased. The method may also be used for upregulating ghrelin for the
CC treatment, prevention or amelioration of anorexia or cachexia. The method
CC may also be used for treating wound or burns, in adjuvant therapy for in
CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
CC related cancers. The present sequence represents a ghrelin analogue
CC comprising mature ghrelin with added epitopes used in an example of the
CC invention.

XX SQ Sequence 68 AA;

Query Match 100.0%; Score 74; DB 8; Length 68;
Best Local Similarity 100.0%; Pred. No. 4.9e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

Db 52 QYIKANSKFIGITEL 66
 RESULT 125
 AAB46190
 ID AAB46190 standard; peptide; 72 AA.
 XX
 AC AAB46190;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid epitope fusion construct #10.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW FC receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072880-A2.
 XX
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX
 DR WPI; 2001-032104/04.
 XX
 PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Disclosure; Page 32; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 72 AA;
 Query Match 100.0%; Score 74; DB 4; Length 72;
 Best Local Similarity 100.0%; Pred. NO. 5.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 37 QYIKANSKFIGITEL 51
 RESULT 126
 ADP02897
 ID ADP02897 standard; peptide; 74 AA.
 XX
 AC ADP02897;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #27 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 30; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 74 AA;
 Query Match 100.0%; Score 74; DB 8; Length 74;
 Best Local Similarity 100.0%; Pred. NO. 5.4e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 1 QYIKANSKFIGITEL 15
 RESULT 127
 ADP02915
 ID ADP02915 standard; peptide; 79 AA.
 XX
 AC ADP02915;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #27 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 XX
 PN WO2004041067-A2.
 XX

PD 21-MAY-2004.
 XX 31-OCT-2003; 2003WO-US034527.
 PF
 XX 01-NOV-2002; 2002US-0423012P.
 PR
 XX (ELAN-) ELAN PHARM INC.
 XX (REGC) UNIV CALIFORNIA.
 PA
 XX Schenk DB, Masliah E;
 PI
 XX WPI; 2004-411388/38.
 XX
 DR Preventing or treating disease such as Parkinson's disease characterized
 XX by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PF agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 48; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 79 AA;
 Query Match 100.0%; Score 74; DB 8; Length 79;
 Best Local Similarity 100.0%; Pred. No. 5.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 37 QYIKANSKFIGITEL 51
 RESULT 128
 ADP02896
 ID ADP02896 standard; peptide; 101 AA.
 XX
 AC ADP02896;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #8 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 OS
 XX WO2004041067-A2.
 PN
 XX 21-MAY-2004.
 PD
 XX 31-OCT-2003; 2003WO-US034527.
 PF
 XX 01-NOV-2002; 2002US-0423012P.
 PR
 XX (ELAN-) ELAN PHARM INC.
 XX (REGC) UNIV CALIFORNIA.
 PA
 XX Schenk DB, Masliah E;
 PI
 XX WPI; 2004-411388/38.
 XX
 DR Preventing or treating disease such as Parkinson's disease characterized
 XX by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PF agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 48; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 79 AA;
 Query Match 100.0%; Score 74; DB 8; Length 79;
 Best Local Similarity 100.0%; Pred. No. 5.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 37 QYIKANSKFIGITEL 51

XX WPI; 2004-411388/38.
 DR Preventing or treating disease such as Parkinson's disease characterized
 XX by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PF agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 29; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 101 AA;
 Query Match 100.0%; Score 74; DB 8; Length 101;
 Best Local Similarity 100.0%; Pred. No. 7.6e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 129
 AAB20147
 ID AAB20147 standard; protein; 109 AA.
 XX
 AC AAB20147;
 XX
 DT 30-APR-2001 (first entry)
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P2-3.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 1..82
 FT /note= "identical to residues 267-348 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"
 FT Region 83..97
 FT /note= "tetanus toxoid P2 epitope"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 FT Region 98..109
 FT /note= "identical to residues 364-375 of human GDF-8"
 XX
 PN WO200105820-A2.
 XX
 XX 25-JAN-2001.
 PD
 XX 20-JUL-2000; 2000WO-DK000413.
 PF
 XX

PR 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 PA (MEBI-) M & E BIOTECH AS.
 XX Halkier T, Mouritsen S, Klysner S;
 XX WPI; 2001-112680/12.
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 99; 110pp; English.
 XX
 CC The present sequence is that of AutoVac construct GDF-8 P2-3, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 83-97 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P2, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 74; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 8.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 83 QYIKANSKFIGITEL 97
 RESULT 130
 AAB20146
 ID AAB20146 standard; protein; 109 AA.
 XX
 AC AAB20146;
 XX
 DT 30-APR-2001 (first entry)
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P2-2.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 1..51
 FT /note= "identical to residues 267-317 of human GDF-8"
 FT Region 52..66
 FT /note= "tetanus toxoid P2 epitope"
 FT Region 67..109
 FT /note= "identical to residues 333-375 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid

FT disulfide bond formation"
 FT Misc-difference 90..91
 XX /note= "optionally replaced by Glu-Gly"
 XX
 PN WO200105820-A2.
 XX
 PD 25-JAN-2001.
 XX
 XX 20-JUL-2000; 2000WO-DK000413.
 XX
 XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 XX Halkier T, Mouritsen S, Klysner S;
 PI WPI; 2001-112680/12.
 DR
 XX
 PT Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 97-98; 110pp; English.
 PS
 CC The present sequence is that of AutoVac construct GDF-8 P2-2, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 52-66 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P2, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 74; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 8.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 52 QYIKANSKFIGITEL 66
 RESULT 131
 AAB20145
 ID AAB20145 standard; protein; 109 AA.
 XX
 AC AAB20145;
 XX
 XX 30-APR-2001 (first entry)
 DT
 XX
 DE Growth differentiation factor 8 AutoVac construct GDF-8 P2-1.
 XX
 KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.

XX PH Key Location/Qualifiers
 FT Region 1..17
 FT /note= "identical to residues 267-283 of human GDF-8"
 FT Region 18..32
 FT /note= "tetanus toxoid P2 epitope"
 FT Region 33..109
 FT /note= "identical to residues 299-375 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 XX WO200105820-A2.
 XX 25-JAN-2001.
 XX 20-JUL-2000; 2000WO-DK000413.
 XX 20-JUL-1999; 99DK-00001014.
 XX 26-JUL-1999; 99US-0145275P.
 XX (MEBI-) M & E BIOTECH AS.
 XX Halkier T, Mouritsen S, Klysner S;
 XX WPI; 2001-112680/12.
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 FT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 FT through induction of anti-GDF-8 antibody production.
 XX
 XX Example 1; Page 96; 110pp; English.
 XX
 XX The present sequence is that of AutoVac construct GDF-8 P2-1, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 18-32 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P2 (see AAB20143). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P2, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX
 SQ Sequence 109 AA;
 Query Match 100.0%; Score 74; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 8.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 18 QYIKANSKFIGITEL 32
 RESULT 132
 AAB45502
 ID AAB45502 standard; protein; 116 AA.
 XX
 AC AAB45502;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 133
 AAB45526
 ID AAB45526 standard; protein; 116 AA.
 XX
 AC AAB45526;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 52.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Mus musculus.
 OS Clostridium tetani.
 XX
 WO200065058-A1.
 XX
 02-NOV-2000.
 XX
 19-APR-2000; 2000WO-DK000205.
 XX
 23-APR-1999; 99DK-00000552.
 PR
 06-MAY-1999; 99US-0132811P.
 XX
 (MEBI-) M & E BIOTECH AS.
 XX
 Klysner S;
 XX
 WPI; 2000-672791/65.
 XX
 Down-regulating interleukin 5 (IL-5) activity in humans by administering
 FT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 FT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 2; Page 129-130; 172pp; English.
 XX
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 116 AA;
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 133
 AAB45526
 ID AAB45526 standard; protein; 116 AA.
 XX
 AC AAB45526;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 52.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Mus musculus.
 OS Clostridium tetani.
 XX
 WO200065058-A1.
 XX
 02-NOV-2000.
 XX
 19-APR-2000; 2000WO-DK000205.
 XX
 23-APR-1999; 99DK-00000552.
 PR
 06-MAY-1999; 99US-0132811P.
 PR

DE Modified murine interleukin-5 SEQ ID NO: 14.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Mus musculus.
 OS Clostridium tetani.
 XX
 WO200065058-A1.
 XX
 02-NOV-2000.
 XX
 19-APR-2000; 2000WO-DK000205.
 XX
 23-APR-1999; 99DK-00000552.
 PR
 06-MAY-1999; 99US-0132811P.
 XX
 (MEBI-) M & E BIOTECH AS.
 XX
 Klysner S;
 XX
 WPI; 2000-672791/65.
 XX
 Down-regulating interleukin 5 (IL-5) activity in humans by administering
 FT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 FT amelioration of asthma or other chronic allergic conditions.
 XX
 XX Example 2; Page 129-130; 172pp; English.
 XX
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 116 AA;
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB |||||
 30 QYIKANSKFIGITEL 44
 RESULT 133
 AAB45526
 ID AAB45526 standard; protein; 116 AA.
 XX
 AC AAB45526;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified murine interleukin-5 SEQ ID NO: 52.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Mus musculus.
 OS Clostridium tetani.
 XX
 WO200065058-A1.
 XX
 02-NOV-2000.
 XX
 19-APR-2000; 2000WO-DK000205.
 XX
 23-APR-1999; 99DK-00000552.
 PR
 06-MAY-1999; 99US-0132811P.
 PR

XX FA (MEBI-) M & E BIOTECH AS.
 XX PI Klysner S;
 XX XX WPI; 2000-672791/65.
 XX DR N-PSDB; AAC68879.
 XX XX
 XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 XX PT amelioration of asthma or other chronic allergic conditions.
 XX XX
 XX PS Disclosure; Page 159-160; 172pp; English.
 XX XX
 XX CC The present invention is concerned with methods of treating asthma,
 XX CC eosinophilia, allergic rhinitis and other allergic diseases. These
 XX CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 XX CC proteins and their coding sequences to down-regulate IL-5 activity and
 XX CC thus reduce eosinophil numbers. The allergic diseases may be treated
 XX CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 XX CC it is possible that they may be used in the treatment of cancer and
 XX CC helminthic infections
 XX XX
 XX SQ Sequence 116 AA;
 Query Match 100.0%; Score 74; DB 3; Length 116;
 Best Local Similarity 100.0%; Pred. No. 8.8e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Oy 1 QYIKANSKFIGITEL 15
 Db 30 QYIKANSKFIGITEL 44
 RESULT 134
 AAB45491
 ID AAB45491 standard; protein; 118 AA.
 XX AC AAB45491;
 XX XX
 XX DT 26-FEB-2001 (first entry)
 XX XX
 XX DE Modified human interleukin-5 SEQ ID NO: 3.
 XX XX
 XX XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX XX
 XX OS Homo sapiens.
 XX OS Clostridium tetani.
 XX XX
 XX FN WO200065058-A1.
 XX XX
 XX PD 02-NOV-2000.
 XX XX
 XX PF 19-APR-2000; 2000WO-DK000205.
 XX XX
 XX PR 23-APR-1999; 99DK-00000552.
 XX PR 06-MAY-1999; 99US-0132811P.
 XX XX
 XX FA (MEBI-) M & E BIOTECH AS.
 XX XX
 XX PI Klysner S;
 XX XX
 XX DR WPI; 2000-672791/65.
 XX XX
 XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 XX PT amelioration of asthma or other chronic allergic conditions.
 XX XX
 XX PS Example 2; Page 120; 172pp; English.
 XX XX
 XX CC The present invention is concerned with methods of treating asthma,
 XX CC eosinophilia, allergic rhinitis and other allergic diseases. These

CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX XX
 XX SQ Sequence 118 AA;
 Query Match 100.0%; Score 74; DB 3; Length 118;
 Best Local Similarity 100.0%; Pred. No. 9e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Oy 1 QYIKANSKFIGITEL 15
 Db 32 QYIKANSKFIGITEL 46
 RESULT 135
 AAB45518
 ID AAB45518 standard; protein; 118 AA.
 XX AC AAB45518;
 XX XX
 XX DT 26-FEB-2001 (first entry)
 XX XX
 XX DE Modified human interleukin-5 SEQ ID NO: 36.
 XX XX
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX XX
 XX OS Homo sapiens.
 XX OS Clostridium tetani.
 XX XX
 XX FN WO200065058-A1.
 XX XX
 XX PD 02-NOV-2000.
 XX XX
 XX PF 19-APR-2000; 2000WO-DK000205.
 XX XX
 XX PR 23-APR-1999; 99DK-00000552.
 XX PR 06-MAY-1999; 99US-0132811P.
 XX XX
 XX FA (MEBI-) M & E BIOTECH AS.
 XX XX
 XX PI Klysner S;
 XX XX
 XX DR WPI; 2000-672791/65.
 XX DR N-PSDB; AAC68871.
 XX XX
 XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 XX PT amelioration of asthma or other chronic allergic conditions.
 XX XX
 XX PS Example 2; Page 146; 172pp; English.
 XX XX
 XX CC The present invention is concerned with methods of treating asthma,
 XX CC eosinophilia, allergic rhinitis and other allergic diseases. These
 XX CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 XX CC proteins and their coding sequences to down-regulate IL-5 activity and
 XX CC thus reduce eosinophil numbers. The allergic diseases may be treated
 XX CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 XX CC it is possible that they may be used in the treatment of cancer and
 XX CC helminthic infections
 XX XX
 XX SQ Sequence 118 AA;
 Query Match 100.0%; Score 74; DB 3; Length 118;
 Best Local Similarity 100.0%; Pred. No. 9e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Oy 1 QYIKANSKFIGITEL 15
 Db 32 QYIKANSKFIGITEL 46

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Db      32 QYIKANSKFIGITEL 46

RESULT 136
AAB45527
ID AAB45527 standard; protein; 122 AA.
XX
AC AAB45527;
XX
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 54.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
XX WO200065058-A1.
PN
XX
PD 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
PR
XX 06-MAY-1999; 99US-0132811P.
XX
XX (WEBI-) M & E BIOTECH AS.
PA
XX Klysner S;
PI
XX WPI; 2000-672791/65.
DR
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 3; Page 130-131; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 122 AA;
SQ
Query Match 100.0%; Score 74; DB 3; Length 122;
Best Local Similarity 100.0%; Pred. No. 9.3e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 QYIKANSKFIGITEL 15
Db 57 QYIKANSKFIGITEL 71

RESULT 138
AAB45504
ID AAB45504 standard; protein; 122 AA.
XX
AC AAB45504;
XX
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 16.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
XX WO200065058-A1.
PN
XX
PD 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
XX
XX 23-APR-1999; 99DK-00000552.
PR
XX 06-MAY-1999; 99US-0132811P.
XX
XX (WEBI-) M & E BIOTECH AS.
PA
XX Klysner S;
PI

```

XX WPI; 2000-672791/65.
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 4; Page 131; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX Sequence 122 AA;
 Query Match 100.0%; Score 74; DB 3; Length 122;
 Best Local Similarity 100.0%; Pred. NO. 9.3e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 Qy 1 QYIKANSKFIGITEL 15
 Db |||||
 84 QYIKANSKFIGITEL 98
 RESULT 139
 AAB45519
 ID AAB45519 standard; protein; 124 AA.
 AC AAB45519;
 XX 26-FEB-2001 (first entry)
 DT Modified human interleukin-5 SEQ ID NO: 38.
 DE Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 KW Homo sapiens.
 OS Clostridium tetani.
 XX WO200065058-A1.
 XX 02-NOV-2000.
 XX 19-APR-2000; 2000WO-DK000205.
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX (MEBI-) M & E BIOTECH AS.
 PA Klysner S;
 PI WPI; 2000-672791/65.
 DR N-PSDB; AAC68872.
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 4; Page 147-148; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,

CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX Sequence 124 AA;
 Query Match 100.0%; Score 74; DB 3; Length 124;
 Best Local Similarity 100.0%; Pred. NO. 9.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 Qy 1 QYIKANSKFIGITEL 15
 Db |||||
 86 QYIKANSKFIGITEL 100
 RESULT 140
 AAB45523
 ID AAB45523 standard; protein; 124 AA.
 AC AAB45523;
 XX 26-FEB-2001 (first entry)
 DT Modified murine interleukin-5 SEQ ID NO: 46.
 DE Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 KW Mus musculus.
 OS Clostridium tetani.
 XX WO200065058-A1.
 XX 02-NOV-2000.
 XX 19-APR-2000; 2000WO-DK000205.
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX (MEBI-) M & E BIOTECH AS.
 PA Klysner S;
 PI WPI; 2000-672791/65.
 DR N-PSDB; AAC68876.
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 1; Page 154-155; 172pp; English.
 XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX Sequence 124 AA;
 Query Match 100.0%; Score 74; DB 3; Length 124;
 Best Local Similarity 100.0%; Pred. NO. 9.5e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 Qy 1 QYIKANSKFIGITEL 15
 Db |||||
 86 QYIKANSKFIGITEL 100
 RESULT 141

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AAB45492
ID AAB45492 standard; protein; 124 AA.
AC AAB45492;
XX
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified human interleukin-5 SEQ ID NO: 4.
XX
XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX Homo sapiens.
OS Clostridium tetani.
XX
XX WO200065058-A1.
PN
XX 02-NOV-2000.
PD
XX
XX 19-APR-2000; 2000WO-DK000205.
PF
XX
XX 23-APR-1999; 99DK-00000552.
PR
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
PA
XX Klysner S;
PI
XX WPI; 2000-672791/65.
DR
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 3; Page 121; 172pp; English.
XX
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 124 AA;
SQ
XX
XX Query Match 100.0%; Score 74; DB 3; Length 124;
XX Best Local Similarity 100.0%; Pred. No. 9.5e-06;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX
XX Db 108 QYIKANSKFIGITEL 122
XX
XX RESULT 143
XX AAB45501
XX ID AAB45501 standard; protein; 124 AA.
XX
XX AC AAB45501;
XX
XX 26-FEB-2001 (first entry)
DT
XX
XX DE Modified murine interleukin-5 SEQ ID NO: 13.
XX
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX OS Mus musculus.
XX OS Clostridium tetani.
XX
XX PN WO200065058-A1.
XX
XX PD 02-NOV-2000.
XX
XX 19-APR-2000; 2000WO-DK000205.
PF
XX
XX 23-APR-1999; 99DK-00000552.
PR
XX 06-MAY-1999; 99US-0132811P.
XX
XX (MEBI-) M & E BIOTECH AS.
PA
XX Klysner S;
PI
XX WPI; 2000-672791/65.
DR
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or

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PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 4; Page 129; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections

XX SQ Sequence 124 AA;

Query Match 100.0%; Score 74; DB 3; Length 124;

Best Local Similarity 100.0%; Pred. No. 9.5e-06;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYKANSKFIGITEL 15

Db 85 QYKANSKFIGITEL 99

RESULT 144

AAB45493
ID AAB45493 standard; protein; 124 AA.

XX AC AAB45493;

XX DT 26-FEB-2001 (first entry)

XX DE Modified human interleukin-5 SEQ ID NO: 5.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX PD 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (WEBI-) M & E BIOTECH AS.

XX PI Klysner S;

XX DR WPI; 2000-672791/65.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.

XX Example 4; Page 121-123; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections

XX SQ Sequence 124 AA;

Query Match 100.0%; Score 74; DB 3; Length 124;

Best Local Similarity 100.0%; Pred. No. 9.5e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYKANSKFIGITEL 15

Db 86 QYKANSKFIGITEL 100

RESULT 145

AAB45517
ID AAB45517 standard; protein; 124 AA.

XX AC AAB45517;

XX DT 26-FEB-2001 (first entry)

XX DE Modified human interleukin-5 SEQ ID NO: 34.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX PD 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (WEBI-) M & E BIOTECH AS.

XX PI Klysner S;

XX DR WPI; 2000-672791/65.

XX DR N-PSDB; AAC68870.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.

XX Example 3; Page 144; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections

XX SQ Sequence 124 AA;

Query Match 100.0%; Score 74; DB 3; Length 124;

Best Local Similarity 100.0%; Pred. No. 9.5e-06;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYKANSKFIGITEL 15

Db 59 QYKANSKFIGITEL 73

RESULT 146

AAB45490
ID AAB45490 standard; protein; 126 AA.

XX AC AAB45490;

XX DT 26-FEB-2001 (first entry)

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XX DE Modified human interleukin-5 SEQ ID NO: 2.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Klysner S;
XX PI WPI; 2000-672791/65.
XX DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX PT amelioration of asthma or other chronic allergic conditions.
XX PS Example 1; Page 119; 172pp; English.
XX SS The present invention is concerned with methods of treating asthma,
XX CC eosinophilia, allergic rhinitis and other allergic diseases. These
XX CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX CC proteins and their coding sequences to down-regulate IL-5 activity and
XX CC thus reduce eosinophil numbers. The allergic diseases may be treated
XX CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX CC it is possible that they may be used in the treatment of cancer and
XX CC helminthic infections
XX SQ Sequence 126 AA;
XX Query Match 100.0%; Score 74; DB 3; Length 126;
XX Best Local Similarity 100.0%; Pred. No. 9.7e-06;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
Db |||||
Db 110 QYIKANSKFIGITEL 124

RESULT 148
AAB45494
ID AAB45514 standard; protein; 126 AA.
XX AC AAB45514;
XX DT 26-FEB-2001 (first entry)
XX DE Modified human interleukin-5 SEQ ID NO: 28.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Klysner S;
XX PI WPI; 2000-672791/65.
XX DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX PT amelioration of asthma or other chronic allergic conditions.
XX PS Example 1; Page 139; 172pp; English.
XX SS The present invention is concerned with methods of treating asthma,
XX CC

QY 1 QYIKANSKFIGITEL 15
Db |||||
Db 87 QYIKANSKFIGITEL 101

RESULT 147
AAB45494
ID AAB45494 standard; protein; 126 AA.
XX AC AAB45494;
XX DT 26-FEB-2001 (first entry)
XX DE Modified human interleukin-5 SEQ ID NO: 6.
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX PN WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.

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CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 126 AA;

Query Match 100.0%; Score 74; DB 3; Length 126;
 Best Local Similarity 100.0%; Pred. No. 9.7e-06;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 88 QYIKANSKFIGITEL 102

RESULT 149

ID AAB49089 standard; protein; 136 AA.

XX AAB49089;

XX 11-SEP-2003. (revised)

DT 27-MAR-2001 (first entry)

XX Amyloid beta tetanus toxoid/HA/CS fusion protein, SEQ ID NO:25.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Influenza virus.

OS Plasmodium falciparum.

OS Chimeric.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least

CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 XX 2003 to standardise OS field)

XX SQ Sequence 136 AA;

Query Match 100.0%; Score 74; DB 4; Length 136;

Best Local Similarity 100.0%; Pred. No. 1.1e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

|||||

Db 37 QYIKANSKFIGITEL 51

RESULT 150

AAY82634

ID AAY82634 standard; peptide; 137 AA.

XX AAY82634;

XX 07-AUG-2000 (first entry)

XX Tetanus toxoid T cell epitopes and Der pII B cell epitopes peptide.

XX T cell epitope; B cell epitope; allergy; allergen; antigenic;

KW antiallergic; antiasthmatic; antiinflammatory; dermatological;

KW immunosuppressive; vaccine; rhinitis; sinusitis; bronchial asthma;

KW atopic dermatitis; acute urticaria; chronic urticaria;

KW gastro-intestinal syndrome; food allergen; oro-pharyngeal syndrome;

KW anaphylactic reaction; drug hypersensitivity; allergic reaction.

XX Dermatophagoides pteronyssinus.

OS Clostridium tetani.

OS Synthetic.

XX WO200006694-A2.

XX 10-FEB-2000.

XX 20-JUL-1999; 99WO-BE000092.

XX 30-JUL-1998; 98EP-00870167.

XX (UNIO) UCB SA.

XX Saint-Remy J, Jacquemin M;

XX WPI; 2000-422470/36.

XX New compound for prevention and treatment of allergies comprises at least
 PT one allergen antigenic determinant recognized by a B cell and at least
 PT one antigenic determinant which does not trigger T cell activation.

XX Claim 8; Page 35; 50pp; English.

XX The present invention describes a compound (I) for the prevention and/or

CC treatment of allergy. The compound comprises at least one allergen
 CC antigenic determinant (i) recognised by a B cell or an antibody secreted
 CC by a B cell of a non-atopic individual and at least one antigenic
 CC determinant (ii) different from the allergen that triggers T cell
 CC activation. (i) has anti-allergic, antiasthmatic, anti-inflammatory,
 CC dermatological and immunosuppressive activities, and can be used in a
 CC vaccine. (ii) may be used in a pharmaceutical or cosmetic medicament to
 CC treat and/or prevent allergies or a disease of allergic origin,
 CC especially hypersensitivities. These include rhinitis, sinusitis,
 CC bronchial asthma, atopic dermatitis, some forms of acute and chronic
 CC urticaria, gastro-intestinal syndromes associated with the ingestion of
 CC food allergens, oro-pharyngeal syndromes, anaphylactic reactions
 CC associated with drug hypersensitivities and/or a mixture of these. The
 CC use of (i) in the treatment of allergic conditions avoids the need for
 CC drug treatment, which often causes undesirable side-effects. Also, prior
 CC art drug therapies alleviate symptoms, but do not influence their causes,
 CC however (ii) actually combats the cause of an allergic reaction. The
 CC present sequence represents a specifically claimed compound peptide
 CC sequence from the present invention

XX Sequence 137 AA;

Query Match 100.0%; Score 74; DB 3; Length 137;
 Best Local Similarity 100.0%; Pred. No. 1.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 2 QYIKANSKFIGITEL 16

RESULT 151

AAB45510
 ID AAB45510 standard; protein; 139 AA.

XX AAB45510;

DT 26-FEB-2001 (first entry)

DE Modified murine interleukin-5 SEQ ID NO: 22.

XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX Mus musculus.
 OS Clostridium tetani.

XX WO200065058-A1.

XX 02-NOV-2000.

PF 19-APR-2000; 2000WO-DK000205.

XX 23-APR-1999; 99DK-00000552.

PR 06-MAY-1999; 99US-0132811P.

XX (MEBI-) M & E BIOTECH AS.

PA Klysner S;

PI WPI; 2000-672791/65.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX Example 10; Page 137; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated

CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX Sequence 139 AA;

Query Match 100.0%; Score 74; DB 3; Length 139;
 Best Local Similarity 100.0%; Pred. No. 1.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 84 QYIKANSKFIGITEL 98

RESULT 152

AAB45499

ID AAB45499 standard; protein; 141 AA.

XX AAB45499;

DT 26-FEB-2001 (first entry)

DE Modified human interleukin-5 SEQ ID NO: 11.

XX Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX Homo sapiens.

OS Clostridium tetani.

XX WO200065058-A1.

XX 02-NOV-2000.

XX 19-APR-2000; 2000WO-DK000205.

XX 23-APR-1999; 99DK-00000552.

PR 06-MAY-1999; 99US-0132811P.

XX (MEBI-) M & E BIOTECH AS.

PA Klysner S;

PI WPI; 2000-672791/65.

XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX Example 10; Page 127; 172pp; English.

XX The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX Sequence 141 AA;

Query Match 100.0%; Score 74; DB 3; Length 141;
 Best Local Similarity 100.0%; Pred. No. 1.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 86 QYIKANSKFIGITEL 100

RESULT 153

```

AAB45530
ID AAB45530 standard; protein; 145 AA.
AC
XX
AC AAB45530;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 60.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
XX
OS Clostridium tetani.
XX
XX WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
PI WPI; 2000-672791/65.
XX
DR N-PSDB; AAC68875.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 12; Page 153; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 145 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 145;
Best Local Similarity 100.0%; Pred. No. 1.1e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 86 QYIKANSKFIGITEL 100

RESULT 154
AAB45522
ID AAB45522 standard; protein; 147 AA.
XX
AC AAB45522;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified human interleukin-5 SEQ ID NO: 44.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Homo sapiens.
XX
OS Clostridium tetani.
XX

AAB45530
ID AAB45530 standard; protein; 145 AA.
AC
XX
AC AAB45530;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 60.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
XX
OS Clostridium tetani.
XX
XX WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
PI WPI; 2000-672791/65.
XX
DR N-PSDB; AAC68883.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX Example 12; Page 166-167; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX Sequence 145 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 145;
Best Local Similarity 100.0%; Pred. No. 1.1e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 86 QYIKANSKFIGITEL 100

RESULT 154
AAB45522
ID AAB45522 standard; protein; 147 AA.
XX
AC AAB45522;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified human interleukin-5 SEQ ID NO: 44.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Homo sapiens.
XX
OS Clostridium tetani.
XX

WO200065058-A1.
PD 02-NOV-2000.
PF 19-APR-2000; 2000WO-DK000205.
PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
PA (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX N-PSDB; AAC68875.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 12; Page 153; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
XX eosinophilia, allergic rhinitis and other allergic diseases. These
XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX proteins and their coding sequences to down-regulate IL-5 activity and
XX thus reduce eosinophil numbers. The allergic diseases may be treated
XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX it is possible that they may be used in the treatment of cancer and
XX helminthic infections
XX Sequence 147 AA;
XX
Query Match 100.0%; Score 74; DB 3; Length 147;
Best Local Similarity 100.0%; Pred. No. 1.1e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 88 QYIKANSKFIGITEL 102

RESULT 155
AAW81331
ID AAW81331 standard; protein; 158 AA.
XX
AC AAW81331;
XX
XX 21-APR-1999 (first entry)
XX
DE TNF2-7, a TNF-alpha analogue.
XX
KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
KW asthma.
XX
XX Synthetic.
XX
XX Homo sapiens.
XX
XX WO9846642-A1.
XX
XX 22-OCT-1998.
XX
XX 15-APR-1998; 98WO-DK000157.
XX
XX 15-APR-1997; 97DK-00000418.
XX
XX 24-APR-1997; 97US-0044187P.
XX
XX (FERR ) FARM LAB FERRING AS.
XX
XX Jensen MR, Mouritsen S, Elaner H, Dalum I;
XX

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DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68420.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.
 XX
 PS
 PS Claim 13; Page 73; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 77 QYIKANSKFIGITEL 91
 RESULT 156
 AAW81328
 ID AAW81328 standard; protein; 158 AA.
 AC AAW81328;
 XX
 DT 21-APR-1999 (first entry)
 DE TNF2-3, a TNF-alpha analogue.
 XX
 KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 PN WO9846642-A1.
 XX
 PD 22-OCT-1998.
 XX
 PF 15-APR-1998; 98WO-DK000157.
 XX
 PR 15-APR-1997; 97DK-00000418.
 PR 24-APR-1997; 97US-0044187P.
 XX
 PA (FERR) FARM LAB FERRING AS.
 XX
 PI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX
 DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68417.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

XX
 PS Claim 14; Page 67-68; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 66 QYIKANSKFIGITEL 80
 RESULT 157
 AAW81329
 ID AAW81329 standard; protein; 158 AA.
 AC AAW81329;
 XX
 DT 21-APR-1999 (first entry)
 DE TNF2-4, a TNF-alpha analogue.
 XX
 KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 PN WO9846642-A1.
 XX
 PD 22-OCT-1998.
 XX
 PF 15-APR-1998; 98WO-DK000157.
 XX
 PR 15-APR-1997; 97DK-00000418.
 PR 24-APR-1997; 97US-0044187P.
 XX
 PA (FERR) FARM LAB FERRING AS.
 XX
 PI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX
 DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68418.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.
 XX
 PS Example 1; Page 69-70; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by

CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 CC
 CC SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 115 QYIKANSKFIGITEL 129

RESULT 158
 AAW81330
 ID AAW81330 standard; protein; 158 AA.

AC AAW81330;

DT 21-APR-1999 (first entry)

DE TNF2-5, a TNF-alpha analogue.

KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.

OS Synthetic.

OS Homo sapiens.

FN WO9846642-A1.

XX 22-OCT-1998.

PF 15-APR-1998; 98WO-DK000157.

PR 15-APR-1997; 97DK-00000418.

PR 24-APR-1997; 97US-0044187P.

PA (FERR) FARM LAB FERRING AS.

PI Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX WPI; 1998-594561/50.

DR N-PSDB; AAV68419.

PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

PS Claim 12; Page 71; 134pp; English.

XX The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting

CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 CC
 CC SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 133 QYIKANSKFIGITEL 147

RESULT 159
 AAW81327
 ID AAW81327 standard; protein; 158 AA.

XX

AC AAW81327;

XX 21-APR-1999 (first entry)

DE TNF2-1, a TNF-alpha analogue.

KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 KW asthma.

XX Synthetic.

OS Homo sapiens.

XX WO9846642-A1.

PN 22-OCT-1998.

XX 15-APR-1998; 98WO-DK000157.

XX 15-APR-1997; 97DK-00000418.

PR 24-APR-1997; 97US-0044187P.

XX (FERR) FARM LAB FERRING AS.

XX Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX WPI; 1998-594561/50.

DR N-PSDB; AAV68416.

PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

PS Example 1; Page 65-66; 134pp; English.

XX The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 11 QYIKANSKFIGITEL 25
 |||||

RESULT 160
 ABB07277
 ID ABB07277 standard; protein; 158 AA.
 XX AC ABB07277;
 XX DT 26-MAR-2002 (first entry)
 XX DE Human TNF-alpha analogue TNF2-7.
 XX KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antitumor; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-7.
 XX OS Homo sapiens.
 XX PN WO200197837-A1.
 XX PD 27-DEC-2001.
 XX PF 20-JUN-2001; 2001WO-DK000431.
 XX PR 21-JUN-2000; 2000DK-00000966.
 XX PA (FERR) FERRING BV.
 XX PI Olesen OF, Balchen T, Bouman MHEM;
 XX DR WPI; 2002-114542/15.
 XX DR N-PSDB; ABA94387.
 XX PT Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises modified immunogenic self-protein and surfactant capable of acting as solubilizer.
 XX PS Claim 21; Page 39; 55pp; English.
 XX CC The invention provides a pharmaceutical vaccine composition (I) for the prevention or treatment of a self-protein-mediated pathology. The composition comprises at least one modified immunogenic self-protein (selected from modified TNF-alpha proteins) and a surfactant capable of acting as a solubilizer. (I) is useful for preventing or treating a self-protein-mediated pathology such as an inflammatory disease, rheumatoid arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis, osteoporosis or asthma. (I) is useful for inducing autoantibodies to a self-protein such as TNF (tumour necrosis factor)-alpha in a human subject. (I) comprising cetylpyridinium chloride as a component is useful for immunisation of a human subject or for treatment of a human inflammatory disease. The present sequence represents a human TNF-alpha analogue TNF2-7

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 77 QYIKANSKFIGITEL 91
 |||||

RESULT 161
 ABB07281
 ID ABB07281 standard; protein; 158 AA.
 XX AC ABB07281;
 XX DT 26-MAR-2002 (first entry)
 XX DE Human TNF-alpha analogue TNF2-4.
 XX KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antitumor; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-4.
 XX OS Homo sapiens.
 XX PN WO200197837-A1.
 XX PD 27-DEC-2001.
 XX PF 20-JUN-2001; 2001WO-DK000431.
 XX PR 21-JUN-2000; 2000DK-00000966.
 XX PA (FERR) FERRING BV.
 XX PI Olesen OF, Balchen T, Bouman MHEM;
 XX DR WPI; 2002-114542/15.
 XX DR N-PSDB; ABA94391.
 XX PT Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises modified immunogenic self-protein and surfactant capable of acting as solubilizer.
 XX PS Claim 21; Page 46-47; 55pp; English.
 XX CC The invention provides a pharmaceutical vaccine composition (I) for the prevention or treatment of a self-protein-mediated pathology. The composition comprises at least one modified immunogenic self-protein (selected from modified TNF-alpha proteins) and a surfactant capable of acting as a solubilizer. (I) is useful for preventing or treating a self-protein-mediated pathology such as an inflammatory disease, rheumatoid arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis, osteoporosis or asthma. (I) is useful for inducing autoantibodies to a self-protein such as TNF (tumour necrosis factor)-alpha in a human subject. (I) comprising cetylpyridinium chloride as a component is useful for immunisation of a human subject or for treatment of a human inflammatory disease. The present sequence represents a human TNF-alpha analogue TNF2-4

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 74; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 DB 115 QYIKANSKFIGITEL 129
 |||||

RESULT 162
 ABB07276

ID ABB07276 standard; protein; 158 AA.
 XX
 AC ABB07276;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF2-3.
 XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-3.
 XX
 XX Homo sapiens.
 OS
 XX WO200197837-A1.
 PN
 XX 27-DEC-2001.
 PD
 XX 20-JUN-2001; 2001WO-DK000431.
 XX
 XX 21-JUN-2000; 2000DK-00000966.
 PR
 XX (FERR) FERRING BV.
 PA
 XX Olesen OF, Balchen T, Bouman MHEM;
 PI
 XX WPI; 2002-114542/15.
 DR
 DR N-PSDB; ABA94386.
 XX
 XX Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.
 XX
 PS Claim 21; Page 37-38; 55pp; English.
 XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self
 CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (I) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF2-3
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 66 QYIKANSKFIGITEL 80
 RESULT 163
 ABB07275
 ID ABB07275 standard; protein; 158 AA.
 XX
 AC ABB07275;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF2-5.
 XX

XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-5.
 XX
 OS Homo sapiens.
 OS
 XX WO200197837-A1.
 PN
 XX 27-DEC-2001.
 PD
 XX 20-JUN-2001; 2001WO-DK000431.
 XX
 XX 21-JUN-2000; 2000DK-00000966.
 PR
 XX (FERR) FERRING BV.
 PA
 XX Olesen OF, Balchen T, Bouman MHEM;
 PI
 XX WPI; 2002-114542/15.
 DR
 DR N-PSDB; ABA94385.
 XX
 XX Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.
 XX
 PS Claim 21; Page 35-36; 55pp; English.
 XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self
 CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (I) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF2-5
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 74; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 1.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 DB 133 QYIKANSKFIGITEL 147
 RESULT 164
 ABB07280
 ID ABB07280 standard; protein; 158 AA.
 XX
 AC ABB07280;
 XX
 DT 26-MAR-2002 (first entry)
 XX
 DE Human TNF-alpha analogue TNF2-1.
 XX
 KW TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF2-1.
 XX

XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption.
 XX Synthetic.
 OS Clostridium tetani.
 OS Mus musculus.
 XX Key Location/Qualifiers
 FT Peptide 1..14 /note= "His tag"
 FT Protein 15..144
 FT Peptide 145..159 /note= "residues 158-287 of murine OPGL"
 FT Protein 160..173 /note= "tetanus toxoid P2 epitope"
 FT Protein 160..173 /note= "residues 303-316 of murine OPGL"
 XX WO200015807-A1.
 PN 23-MAR-2000.
 PD 13-SEP-1999; 99WO-DK000481.
 PF 15-SEP-1998; 98DK-00001164.
 PR 02-OCT-1998; 98US-0102896P.
 XX (MEBI-) M & E BIOTECH AS.
 PA Halkier T, Haaning J;
 PI WPI; 2000-271444/23.
 DR N-PSDB; AAZ99972.
 XX In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.
 PT Example; Page 99-100; 110pp; English.
 XX The present sequence represents fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P2 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption
 XX Sequence 173 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 173;
 Best Local Similarity 100.0%; Pred. NO. 1.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 145 QYIKANSKFIGITEL 159
 RESULT 167
 AAY84424
 ID AAY84424 standard; protein; 182 AA.
 XX
 AC AAY84424;

XX 25-JUL-2000 (first entry)
 DT An osteoprotegerin ligand/tetanus toxoid P30 epitope fusion.
 XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption; ss.
 XX Synthetic.
 OS Clostridium tetani.
 OS Mus musculus.
 XX Key Location/Qualifiers
 FT Peptide 1..14 /note= "His tag"
 FT Protein 15..112 /note= "residues 158-255 of murine OPGL"
 FT Peptide 113..127 /note= "tetanus toxoid P2 epitope"
 FT Protein 128..182 /note= "residues 262-316 of murine OPGL"
 XX WO200015807-A1.
 PN 23-MAR-2000.
 PD 13-SEP-1999; 99WO-DK000481.
 PF 15-SEP-1998; 98DK-00001164.
 PR 02-OCT-1998; 98US-0102896P.
 XX (MEBI-) M & E BIOTECH AS.
 PA Halkier T, Haaning J;
 PI WPI; 2000-271444/23.
 DR N-PSDB; AAZ99971.
 XX In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.
 PT Example; Page 97-98; 110pp; English.
 XX The present sequence encodes a fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P2 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption
 XX Sequence 182 AA;
 SQ
 Query Match 100.0%; Score 74; DB 3; Length 182;
 Best Local Similarity 100.0%; Pred. NO. 1.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 113 QYIKANSKFIGITEL 127
 RESULT 168

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AAO30489
ID AAO30489 standard; protein; 194 AA.
XX
AC AAO30489;
XX
XX 22-SEP-2003 (first entry)
XX
XX Human TNFalpha variant, TNF34-P30-P2.
XX
XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX mutant; variant; tetanus toxoid; epitope.
XX
XX Homo sapiens.
XX Unidentified.
XX Chimeric.
XX
XX Key Location/Qualifiers
XX Region 1..109
XX /note= "Human TNF"
XX Region 110..130
XX /note= "Tetanus toxoid P30 epitope"
XX Region 131..145
XX /note= "Tetanus toxoid P2 epitope"
XX Region 146..194
XX /note= "Human TNF"
XX
XX WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDORGB B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 159-160; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein with
XX an inserted tetanus toxoid P2 and P30 epitopes. This sequence is used to
XX illustrate the method of the invention
XX
XX Sequence 194 AA;
XX
XX Query Match 100.0%; Score 74; DB 6; Length 194;
XX Best Local Similarity 100.0%; Pred. No. 1.6e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX Db 131 QYIKANSKFIGITEL 145
XX
XX RESULT 169

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AAO30488
ID AAO30488 standard; protein; 194 AA.
XX
AC AAO30488;
XX
XX 22-SEP-2003 (first entry)
XX
XX Human TNFalpha variant, TNF34-P2-P30.
XX
XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX mutant; variant; tetanus toxoid; epitope.
XX
XX Homo sapiens.
XX Unidentified.
XX Chimeric.
XX
XX Key Location/Qualifiers
XX Region 2..109
XX /note= "Human TNF"
XX Region 110..124
XX /note= "Tetanus toxoid P2 epitope"
XX Region 125..145
XX /note= "Tetanus toxoid P30 epitope"
XX Region 146..194
XX /note= "Human TNF"
XX
XX WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDORGB B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 158; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein with
XX an inserted tetanus toxoid P2 and P30 epitopes. This sequence is used to
XX illustrate the method of the invention
XX
XX Sequence 194 AA;
XX
XX Query Match 100.0%; Score 74; DB 6; Length 194;
XX Best Local Similarity 100.0%; Pred. No. 1.6e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX Db 110 QYIKANSKFIGITEL 124
XX
XX RESULT 170

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AA92665
ID AAY92665 standard; peptide; 216 AA.
AC AAY92665;
XX
DT 10-AUG-2000 (first entry)
XX
DE MUC-1 analogue containing foreign epitopes.
XX
KW Mucin repeat; MUC-1 analogue; vaccination; self-protein; cancer;
KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
KW cell-associated peptide antigen; foreign epitope.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 61..75
FT /label= P2
FT Peptide 136..156
FT /label= P30
FT /note= "q"
XX
PN WO200020027-A2.
XX
PD 13-APR-2000.
XX
PF 05-OCT-1999; 99WO-DK000525.
XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
DR WPI; 2000-349917/30.
XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
PS Example 4; Page; 220pp; English.
XX
CC This is an immunogenized MUC-1 analogue containing foreign epitopes P2
CC and P30. Immunogenic analogues of MUC-1 and, e.g. human prostate
CC membrane antigen (hPSM) can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms (see features table). 10 regions
CC suitable for the insertion of foreign T helper epitopes were identified.
CC The method is used for inducing immune responses against weakly
CC immunogenic cell-associated peptide antigens (PA) such as those
CC associated with cancers (self-proteins), e.g. hPSM, heregulin 2 (Her2)
CC and/or fibroblast growth factor 8b (FGF8b). The method comprises
CC effecting simultaneous presentation by antigen producing cells (APCs) of
CC the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence does not appear in
CC the specification. It was made using the mucin repeat sequence
CC (AAY92664), P2 and P30 (AAY92625-26), which appear on pages 220, 213 and
CC 214 respectively, of the specification
XX
SQ Sequence 216 AA;

Query Match 100.0%; Score 74; DB 3; Length 216;
Best Local Similarity 100.0%; Pred. No. 1.7e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 QYKANSKFIGITEL 15
DB 61 QYKANSKFIGITEL 75

RESULT 171

AAAB20152
ID AAB20152 standard; protein; 254 AA.

XX
AC AAB20152;
XX

DT 30-APR-2001 (first entry)

XX Growth differentiation factor 8 AutoVac construct GDF-8 dimer.

XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
KW cardiant; human; mutant; mutein.

XX Homo sapiens.
OS Clostridium tetani.
OS Synthetic.
OS Chimeric.

XX Key Location/Qualifiers

FT Region 1..109
FT /note= "109 C-terminal residues of human GDF-8"

FT Misc-difference 90..91
FT /note= "optionally replaced by Glu-Gly"

FT Region 110..124
FT /note= "tetanus toxoid P2 epitope"

FT Region 125..145
FT /note= "tetanus toxoid P30 epitope"

FT Region 146..254
FT /note= "109 C-terminal residues of human GDF-8"

FT Misc-difference 235..236
FT /note= "optionally replaced by Glu-Gly"

XX WO200105820-A2.
XX

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.

XX 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down
PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
PT through induction of anti-GDF-8 antibody production.

XX Example 1; Page 105-106; 110pp; English.

XX The present sequence is that of AutoVac construct GDF-8 dimer comprising
CC 2 copies of the 109-amino acid C-terminal region of human growth
CC differentiation factor 8 (GDF-8, see AAF20141) covalently connected
CC through the P2 and P30 T-cell epitopes (see AAB20143-44) of tetanus
CC toxin. It is an object of the invention to produce a recombinant
CC therapeutic vaccine that is capable of effecting down-regulation of GDF-8
CC in order to increase the muscle growth rate of farm animals. The vaccines
CC (see AAB20145-53) are capable of breaking autotolerance against
CC autologous GDF-8. They comprise the C-terminal portion of human GDF-8 in
CC which a portion of the native sequence is replaced by a T-cell epitope
CC such as P30, with minimal disturbance of the authentic 3-dimensional
CC structure of the protein. Nucleic acids encoding the GDF-8 variants can
CC be used for genetic immunisation of the animals. Down-regulation of GDF-8

CC activity can increase muscle mass by up to at least 45% in cattle, pigs
 CC and poultry used for meat production, reducing the need for antibiotic
 CC feed-additives. Anti-GdH8 vaccines can be used to treat human diseases
 CC such as cancer cachexia where muscle atrophy is pronounced and for
 CC patients suffering from acute and chronic heart failure
 XX

SQ Sequence 254 AA;

Query Match 100.0%; Score 74; DB 4; Length 254;
 Best Local Similarity 100.0%; Pred. No. 2.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 110 QYIKANSKFIGITEL 124

RESULT 172

AAO30457
 ID AAO30457 standard; protein; 285 AA.

XX AAO30457;

XX 22-SEP-2003 (first entry)

XX hIL5-P30-P2-hIL5 (hIL5.34) fusion construct protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.

OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.

Key Location/Qualifiers
 FH Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..285
 FT /note= "Mature hIL5.34 protein"
 FT
 FN WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.

XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;

XX WPI; 2003-449558/42.

XX N-PSDB; AAL61293.

XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

XX Claim 20; Page 109-110; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g. arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises

CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the
 CC invention

SQ Sequence 285 AA;

Query Match 100.0%; Score 74; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. No. 2.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 156 QYIKANSKFIGITEL 170

RESULT 173

AAO30458

ID AAO30458 standard; protein; 285 AA.

XX AAO30458;

XX 22-SEP-2003 (first entry)

XX hIL5-P2-P30-hIL5 (hIL5.35) fusion construct protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.

OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.

Key Location/Qualifiers
 FH Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..285
 FT /note= "Mature hIL5.35 protein"
 FT
 FN WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.

XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;

XX WPI; 2003-449558/42.

XX N-PSDB; AAL61294.

XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

XX Claim 20; Page 112-113; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g. arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises
 CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the

CC invention
 XX Sequence 285 AA;
 SQ Query Match 100.0%; Score 74; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. No. 2.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 135 QYIKANSKFIGITEL 149

RESULT 174
 AAO30459
 ID AAO30459 standard; protein; 287 AA.
 XX AC AAO30459;
 XX DT 22-SEP-2003 (first entry)
 XX DE hIL5.36 variant protein.
 XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
 XX OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX FH Key Location/Qualifiers
 FT Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..287
 FT /note= "Mature hIL5.36 protein"
 FT Region 24..44
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P2 epitope"
 XX WO2003042244-A2.
 XX 22-MAY-2003.
 XX 15-NOV-2002; 2002WO-DK000764.
 XX 16-NOV-2001; 2001DK-00001702.
 XX 16-NOV-2001; 2001US-0331575P.
 XX (PHAR-) PHARMEXA AS.
 XX (KLYS/) KLYSNER S.
 XX (NIEL/) NIELSEN F S.
 XX (BRAT/) BRATT T.
 XX (VOLD/) VOLDORGB B.
 XX (MOUR/) MOURITSEN S.
 XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX WPI; 2003-449558/42.
 XX N-PSDB; AAL61295.
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX Claim 20; Page 115-117; 196pp; English.
 XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which

CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX SQ Sequence 287 AA;
 Query Match 100.0%; Score 74; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 2.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 273 QYIKANSKFIGITEL 287

RESULT 175
 AAO30460
 ID AAO30460 standard; protein; 287 AA.
 XX AC AAO30460;
 XX DT 22-SEP-2003 (first entry)
 XX DE hIL5.37 variant protein.
 XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
 XX OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX FH Key Location/Qualifiers
 FT Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..287
 FT /note= "Mature hIL5.37 protein"
 FT Region 24..38
 FT /note= "Tetanus toxoid P2 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P30 epitope"
 XX WO2003042244-A2.
 XX 22-MAY-2003.
 XX 15-NOV-2002; 2002WO-DK000764.
 XX 16-NOV-2001; 2001DK-00001702.
 XX 16-NOV-2001; 2001US-0331575P.
 XX (PHAR-) PHARMEXA AS.
 XX (KLYS/) KLYSNER S.
 XX (NIEL/) NIELSEN F S.
 XX (BRAT/) BRATT T.
 XX (VOLD/) VOLDORGB B.
 XX (MOUR/) MOURITSEN S.
 XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX WPI; 2003-449558/42.
 XX N-PSDB; AAL61295.
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX Claim 20; Page 117-120; 196pp; English.
 XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which

CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which
 CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 287 AA;

Query Match 100.0%; Score 74; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 2.4e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 24 QYIKANSKFIGITEL 38

RESULT 176

ID AAY70278

AAAY70278 standard; protein; 350 AA.

AC AAY70278;

DT 12-SEP-2003 (revised)

DT 06-JUN-2000 (first entry)

XX Recombinant vaccine CDC/NIIIMALVAC-1.

XX Recombinant protein; CDC/NIIIMALVAC-1; multivalent; malaria; vaccine;
 KW T-cell epitope; tetanus toxoid; antigenic epitope; treatment;
 KW circumsporozoite protein; CSP; sporozoite surface protein-2; SSP-2;
 KW liver stage antigen-1; LSA-1; merozoite surface protein-1; MSP-1; MSP-2;
 KW apical membrane antigen-1; AMA-1; erythrocyte binding antigen-175;
 KW EBA-175; rhoptry associated protein-1; RAP-1; Gamete specific antigen;
 KW Pf27; anti-parasitic; prevention; anti-CDC/NIIIMALVAC-1 antibody;
 KW honey bee.

XX Apis; sp.

OS Clostridium tetani.

OS Plasmodium falciparum.

OS Chimeric.

XX Key Location/Qualifiers

FT Peptide

FT 1..22

FT /label= Melittin signal peptide

FT /note= "Derived from Honey bee"

FT Protein

FT 23..350

FT /label= Mature CDC/NIIIMALVAC-1

FT /note= "Recombinant multivalent malarial vaccine"

XX WO200011179-A1.

XX

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CC which is a multivalent, multistage malarial vaccine. The recombinant
 CC protein comprises, melittin signal peptide, (His)6 tag, T-cell epitope
 CC from tetanus toxoid and 21 antigenic epitopes from circumsporozoite
 CC protein (CSP), sporozoite surface protein-2 (SSP-2), liver stage antigen-
 CC 1 (LSA-1), merozoite surface protein-1 (MSP-1), MSP-2, apical membrane
 CC antigen-1 (AMA-1), erythrocyte binding antigen-175 (EBA-175), rhoptry
 CC associated protein-1 (RAP-1) and gamete specific antigen, Pf27. These
 CC epitopes were obtained at different stages of the life cycle of
 CC Plasmodium falciparum. CDC/NIIIMALVAC-1 vaccine has antiparasitic activity
 CC and can be used for treatment and prevention of malarial infections. Anti-
 CC CDC/NIIIMALVAC-1 antibodies can be used for detecting P. falciparum in
 CC biological samples. (Updated on 12-SEP-2003 to standardise OS field)
 XX
 SQ Sequence 350 AA;

Query Match 100.0%; Score 74; DB 3; Length 350;

Best Local Similarity 100.0%; Pred. No. 3e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

DB 192 QYIKANSKFIGITEL 206

RESULT 177

AAO30491

ID AAO30491 standard; protein; 514 AA.

AC AAO30491;

DT 22-SEP-2003 (first entry)

DE Human TNFalpha variant (TNF_T2) protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.

XX Homo sapiens.

OS Unidentified.

OS Chimeric.

XX Key Location/Qualifiers

FT Region

FT 2..158

FT /note= "Human TNF"

FT Region

FT 159..161

FT /note= "Tri-glycine linker"

FT Region

FT 162..182

FT /note= "Tetanus toxoid P30 epitope"

FT Region

FT 183..339

FT /note= "Human TNF"

FT Region

FT 340..342

FT /note= "Tri-glycine linker"

FT Region

FT 343..357

FT /note= "Tetanus toxoid P2 epitope"

FT Region

FT 358..514

FT /note= "Human TNF"

XX

XX

XX

XX

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XX

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XX

XX

XX

PT Novel recombinant protein as vaccine for treating malarial infection
 PT comprises antigenic peptides obtained from different stages of plasmodium
 PT falciparum life cycle.

XX Claim 3; Page 43-44; 52pp; English.

XX The present sequence is that of recombinant protein CDC/NIIIMALVAC-1.

PA (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.

PA (NIEL/) NIELSEN P S.

PA (BRAT/) BRATT T.

PA (VOLD/) VOLDBOG B.

PA (MOUR/) MOURITSEN S.

PF 15-NOV-2002; 2002WO-DK000764.

PR 16-NOV-2001; 2001DK-00001702.

PR 16-NOV-2001; 2001US-0331575P.

XX PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX PA (PHAR-) PHARMEXA AS.
 XX PA (KLYS/) KLYSNER S.
 XX PA (NIEL/) NIELSEN F S.
 XX PA (BRAT/) BRATT T.
 XX PA (VOLD/) VOLDORG B.
 XX PA (MOUR/) MOURITSEN S.
 XX PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX XX
 XX DR WPI; 2003-449558/42.
 XX DR N-PSDB; AAL61300.
 XX XX
 XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
 XX PT composition for treating inflammatory diseases e.g. arthritis.
 XX PS Claim 23; Page 169-171; 196pp; English.
 XX XX
 XX CC The invention relates to immunogenic analogues of multimeric proteins
 XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 XX CC analogues. The immunogenic analogue is useful for preparing a composition
 XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 XX CC gene therapy. The present sequence is human TNFalpha variant protein with
 XX CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
 XX CC epitopes. This sequence is used to illustrate the method of the invention
 XX XX
 XX SQ Sequence 514 AA;
 Query Match 100.0%; Score 74; DB 6; Length 514;
 Best Local Similarity 100.0%; Pred. No. 4.5e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 343 QYIKANSKFIGITEL 357
 RESULT 178
 AAO30490
 ID AAO30490 standard; protein; 514 AA.
 XX AC AAO30490;
 XX XX
 XX DT 22-SEP-2003 (first entry)
 XX DE Human TNFalpha variant (TNF_T1) protein.
 XX XX
 XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 XX KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 XX KW variant; tetanus toxoid; epitope; mutein.
 XX OS Homo sapiens.
 XX OS Unidentified.
 XX OS Chimeric.
 XX XX
 XX FH Key Location/Qualifiers
 XX FT Region 2..158
 XX FT /note= "Human TNF"
 XX FT Region 159..161
 XX FT /note= "Tri-glycine linker"
 XX FT Region 162..176
 XX FT /note= "Tetanus toxoid P2 epitope"
 XX FT Region 177..333
 XX FT /note= "Human TNF"
 XX FT Region 334..336
 XX FT /note= "Tri-glycine linker"
 XX FT Region 337..357
 XX FT /note= "Tetanus toxoid P30 epitope"
 XX FT Region 358..514
 XX FT /note= "Human TNF"
 XX XX
 XX PN WO2003042244-A2.
 XX XX
 XX PD 22-MAY-2003.
 XX XX
 XX PP 15-NOV-2002; 2002WO-DK000764.
 XX PP 16-NOV-2001; 2001DK-00001702.
 XX PR 16-NOV-2001; 2001US-0331575P.

XX XX
 XX PA (PHAR-) PHARMEXA AS.
 XX PA (KLYS/) KLYSNER S.
 XX PA (NIEL/) NIELSEN F S.
 XX PA (BRAT/) BRATT T.
 XX PA (VOLD/) VOLDORG B.
 XX PA (MOUR/) MOURITSEN S.
 XX PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX XX
 XX DR WPI; 2003-449558/42.
 XX DR N-PSDB; AAL61300.
 XX XX
 XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
 XX PT composition for treating inflammatory diseases e.g. arthritis.
 XX PS Claim 23; Page 163-166; 196pp; English.
 XX XX
 XX CC The invention relates to immunogenic analogues of multimeric proteins
 XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 XX CC analogues. The immunogenic analogue is useful for preparing a composition
 XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 XX CC gene therapy. The present sequence is human TNFalpha variant protein with
 XX CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
 XX CC epitopes. This sequence is used to illustrate the method of the invention
 XX XX
 XX SQ Sequence 514 AA;
 Query Match 100.0%; Score 74; DB 6; Length 514;
 Best Local Similarity 100.0%; Pred. No. 4.5e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 162 QYIKANSKFIGITEL 176
 RESULT 179
 AAO30495
 ID AAO30495 standard; protein; 514 AA.
 XX AC AAO30495;
 XX XX
 XX DT 22-SEP-2003 (first entry)
 XX DE Human TNFalpha variant, hTNFT_4.
 XX XX
 XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 XX KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 XX KW variant; tetanus toxoid; epitope; mutein.
 XX OS Homo sapiens.
 XX OS Unidentified.
 XX OS Chimeric.
 XX XX
 XX FH Key Location/Qualifiers
 XX FT Region 2..158
 XX FT /note= "Human TNF"
 XX FT Region 159..161
 XX FT /note= "Tri-glycine linker"
 XX FT Region 162..318
 XX FT /note= "Human TNF"
 XX FT Region 319..321
 XX FT /note= "Tri-glycine linker"
 XX FT Region 322..336
 XX FT /note= "Tetanus toxoid P2 epitope"
 XX FT Region 337..493
 XX FT /note= "Human TNF"
 XX FT Region 494..514
 XX FT /note= "Tetanus toxoid P30 epitope"
 XX XX
 XX PN WO2003042244-A2.

```

XX PD 22-MAY-2003.
XX PF 15-NOV-2002; 2002WO-DK000764.
XX PR 16-NOV-2001; 2001DK-00001702.
XX PR 16-NOV-2001; 2001US-0331575P.
XX PA (PHAR-) PHARMEXA AS.
XX PA (KLYS/) KLYSNER S.
XX PA (NIEL/) NIELSEN F S.
XX PA (BRAT/) BRATT T.
XX PA (VOLD/) VOLDORG B.
XX PA (MOUR/) MOURITSEN S.
XX PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX DR WPI; 2003-449558/42.
XX DR N-PSDB; AAL61305.
XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
XX FT composition for treating inflammatory diseases e.g. arthritis.
XX PS Claim 23; Page 191-193; 196pp; English.
XX CC The invention relates to immunogenic analogues of multimeric proteins
XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX CC analogues. The immunogenic analogue is useful for preparing a composition
XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
XX CC gene therapy. The present sequence is human TNFalpha variant protein. The
XX CC variant comprises 3 hTNF sequences joined by glycine linkers and tetanus
XX CC toxoid P2 and P30 epitopes. This sequence is used to illustrate the
XX CC method of the invention
XX SQ Sequence 514 AA;
Query Match 100.0%; Score 74; DB 6; Length 514;
Best Local Similarity 100.0%; Pred. No. 4.5e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
322 QYIKANSKFIGITEL 336
RESULT 180
AAO30492
ID AAO30492 standard; protein; 517 AA.
XX AC AAO30492;
XX DT 22-SEP-2003 (first entry)
XX DE Human TNFalpha variant protein #1.
XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
KW variant; tetanus toxoid; epitope; mutein.
XX OS Homo sapiens.
XX OS Unidentified.
XX OS Chimeric.
XX FH Key
XX FT Location/Qualifiers
FT Region 2..158
FT /note= "Human TNF"
FT Region 159..161
FT /note= "Tri-glycine linker"
FT Region 162..318
FT /note= "Human TNF"
FT Region 319..321
FT /note= "Tri-glycine linker"

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FT Region 322..336
FT /note= "Tetanus toxoid P2 epitope"
FT Region 337..493
FT /note= "Human TNF"
FT Region 494..496
FT /note= "Tri-glycine linker"
FT Region 497..517
FT /note= "Tetanus toxoid P2 epitope"
XX WO2003042244-A2.
XX PD 22-MAY-2003.
XX PF 15-NOV-2002; 2002WO-DK000764.
XX PR 16-NOV-2001; 2001DK-00001702.
XX PR 16-NOV-2001; 2001US-0331575P.
XX PA (PHAR-) PHARMEXA AS.
XX PA (KLYS/) KLYSNER S.
XX PA (NIEL/) NIELSEN F S.
XX PA (BRAT/) BRATT T.
XX PA (VOLD/) VOLDORG B.
XX PA (MOUR/) MOURITSEN S.
XX PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX DR WPI; 2003-449558/42.
XX DR N-PSDB; AAL61302.
XX PT New immunogenic analogue of a polymeric protein, useful for preparing a
XX FT composition for treating inflammatory diseases e.g. arthritis.
XX PS Claim 23; Page 175-177; 196pp; English.
XX CC The invention relates to immunogenic analogues of multimeric proteins
XX CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX CC analogues. The immunogenic analogue is useful for preparing a composition
XX CC for treating inflammatory diseases, e.g., arthritis. It is also used in
XX CC gene therapy. The present sequence is human TNFalpha variant protein with
XX CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
XX CC epitopes. This sequence is used to illustrate the method of the invention
XX SQ Sequence 517 AA;
Query Match 100.0%; Score 74; DB 6; Length 517;
Best Local Similarity 100.0%; Pred. No. 4.5e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 QYIKANSKFIGITEL 15
Db |||||
322 QYIKANSKFIGITEL 336
RESULT 181
ABR82481
ID ABR82481 standard; protein; 537 AA.
XX AC ABR82481;
XX DT 20-NOV-2003 (first entry)
XX DE Truncated human CEA-TT P2 and P30 epitopes.
XX KW CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
XX OS Synthetic.
XX FH Key
XX FT Location/Qualifiers
FT Peptide 1..34
FT /note= "signal peptide"

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FT Protein 35. .537
XX /note= "mature protein"
XX WO2003059379-A2.
XX 24-JUL-2003.
XX
XX 17-JAN-2003; 2003WO-DK000031.
XX
XX 17-JAN-2002; 2002DK-00000082.
XX 17-JAN-2002; 2002US-0350047P.
XX
XX (PHAR-) PHARMEXA AS.
XX
XX Klysner S, Voldborg B;
XX
XX WPI; 2003-587260/55.
XX N-PSDB; ACF35968.
XX
XX Inducing an immune response in humans against autologous carcinoembryonic
XX antigen (CEA) comprises administering a modified CEA polypeptide, a
XX nucleic acid encoding the polypeptide, or a microorganism expressing the
XX polypeptide.
XX
XX Disclosure; Page 134-137; 140pp; English.
XX
XX The invention relates to inducing an immune response against autologous
XX carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
XX involves effecting uptake and processing by antigen presenting cells
XX (APCs) in the animal of at least 1 modified CEA polypeptide or of a
XX nucleic acid encoding the modified CEA polypeptide or of a microorganism
XX or virus expressing the modified CEA polypeptide to induce a CTL response
XX and an antibody response that targets the autologous CEA. The method is
XX useful in immunizing actively against diseases characterized by cells
XX that express CEA. The present sequence represents a truncated human CEA
XX polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
XX in its sequence
XX
XX Sequence 537 AA;
XX
XX Query Match 100.0%; Score 74; DB 7; Length 537;
XX Best Local Similarity 100.0%; Pred. No. 4.7e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX 415 QYIKANSKFIGITEL 429
XX
XX Db
XX
XX RESULT 182
XX AAP70345
XX ID AAP70345 standard; protein; 573 AA.
XX
XX AC AAP70345;
XX
XX 25-MAR-2003 (revised)
XX 22-APR-1991 (first entry)
XX
XX DE Portion of B fragment and all of the C fragment of tetanus toxin.
XX
XX TT; vaccine.
XX
XX Clostridium tetani.
XX
XX EP209281-A.
XX
XX 21-JAN-1987.
XX
XX 27-JUN-1986; 86EP-00305029.
XX
XX 28-JUN-1985; 85GB-00016442.
XX
XX (WELL ) WELLCOME FOUND LTD.

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XX Fairweathe NF;
XX
XX WPI; 1987-015999/03.
XX N-PSDB; AAN70545.
XX
XX Cloned DNA sequence coding for tetanus toxin - or its fragments contg.
XX epitope used to express antigens for vaccine prodn.
XX
XX Claim 4; Fig 1; 36pp; English.
XX
XX Gene product comprises a tetanus toxin fragment, which may be expressed
XX in a transformed host, and used as an antigen in vaccine production,
XX against the disease. (Updated on 25-MAR-2003 to correct PA field.)
XX
XX Sequence 573 AA;
XX
XX Query Match 100.0%; Score 74; DB 1; Length 573;
XX Best Local Similarity 100.0%; Pred. No. 5.1e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX 88 QYIKANSKFIGITEL 102
XX
XX Db
XX
XX RESULT 183
XX AAY92649
XX ID AAY92649 standard; protein; 693 AA.
XX
XX AC AAY92649;
XX
XX 10-AUG-2000 (first entry)
XX
XX Mutant human PSM antigen splice variant construct, hPSM*10.3.
XX
XX Prostate specific membrane antigen; immunogenized construct; mutant;
XX vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
XX prostate cancer; cell-associated peptide antigen; foreign epitope.
XX
XX Homo sapiens.
XX Synthetic.
XX
XX Key Location/Qualifiers
XX Peptide 153..173
XX /label= P30
XX /note= "foreign epitope"
XX Peptide 617..631
XX /label= P2
XX /note= "foreign epitope"
XX
XX WO200020027-A2.
XX
XX 13-APR-2000.
XX
XX 05-OCT-1999; 99WO-DK000525.
XX
XX 05-OCT-1998; 98DK-00001261.
XX 20-OCT-1998; 98US-0105011P.
XX
XX (MEBI-) M & E BIOTECH AS.
XX
XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX Gautam A, Birk P, Karlsson G;
XX
XX WPI; 2000-349917/30.
XX
XX Inducing immune responses to weakly immunogenic, tumor associated peptide
XX antigens for the treatment of breast and prostate cancer.
XX
XX Example 1; Page; 220pp; English.
XX
XX AAY92627-49 are mutant immunogenized human prostate specific membrane

```

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 693 AA;

Query Match 100.0%; Score 74; DB 3; Length 693;
 Best Local Similarity 100.0%; Pred. NO. 6.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 617 QYIKANSKFIGITEL 631

RESULT 184

AA92647
 ID AA92647 standard; protein; 693 AA.

AC AA92647;

DT 10-AUG-2000 (first entry)

DE Mutant human PSM antigen splice variant construct, hPSM'6.3.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 XX vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 XX prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.

OS Synthetic.

Key Location/Qualifiers
 FT Peptide 153..173
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 391..405
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX

PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX
 CC AA92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 693 AA;

Query Match 100.0%; Score 74; DB 3; Length 693;
 Best Local Similarity 100.0%; Pred. NO. 6.2e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 |||||
 DB 391 QYIKANSKFIGITEL 405

RESULT 185

ABR82479

ID ABR82479 standard; protein; 708 AA.

AC ABR82479;

DT 20-NOV-2003 (first entry)

DE Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 XX APC; cytostatic; vaccine; human; tetanus toxoid; P2; P30; antigen.

OS Synthetic.

Key Location/Qualifiers
 FT Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..708
 FT /note= "mature protein"

XX WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK000031.

XX 17-JAN-2002; 2002DK-00000082.

PR 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysnar S, Voldborg B;

XX WPI; 2003-587260/55.
 DR N-PSDB; ACF35966.
 XX
 PT Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX
 XX PS Disclosure; Page 121-124; 140pp; English.
 XX
 CC The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence
 XX
 SQ Sequence 708 AA;
 Query Match 100.0%; Score 74; DB 7; Length 708;
 Best Local Similarity 100.0%; Pred. No. 6.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 538 QYIKANSKFIGITEL 552
 |||||
 RESULT 186
 ABR82480
 ID ABR82480 standard; protein; 713 AA.
 XX
 AC ABR82480;
 XX
 DT 20-NOV-2003 (first entry)
 XX
 DE Modified human CEA-TT P2 and P30 epitopes.
 XX
 CC CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..713
 FT /note= "mature protein"
 XX
 XX WO2003059379-A2.
 XX
 XX 24-JUL-2003.
 XX
 XX 17-JAN-2003; 2003WO-DK000031.
 XX
 XX 17-JAN-2002; 2002DK-00000082.
 PR 17-JAN-2002; 2002US-0350047P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Klysner S, Voldborg B;
 FI
 XX WPI; 2003-587260/55.
 DR N-PSDB; ACF35967.
 DR
 XX Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a

PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 XX polypeptide.
 XX
 PS Disclosure; Page 128-131; 140pp; English.
 XX
 CC The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence
 XX
 SQ Sequence 713 AA;
 Query Match 100.0%; Score 74; DB 7; Length 713;
 Best Local Similarity 100.0%; Pred. No. 6.4e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 QYIKANSKFIGITEL 15
 Db 415 QYIKANSKFIGITEL 429
 |||||
 RESULT 187
 ABR82478
 ID ABR82478 standard; protein; 717 AA.
 XX
 AC ABR82478;
 XX
 DT 20-NOV-2003 (first entry)
 XX
 DE Modified human CEA-TT P2 and P30 epitopes.
 XX
 CC CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.
 XX
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..717
 FT /note= "mature protein"
 XX
 XX WO2003059379-A2.
 XX
 XX 24-JUL-2003.
 XX
 XX 17-JAN-2003; 2003WO-DK000031.
 XX
 XX 17-JAN-2002; 2002DK-00000082.
 PR 17-JAN-2002; 2002US-0350047P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Klysner S, Voldborg B;
 FI
 XX WPI; 2003-587260/55.
 DR N-PSDB; ACF35964.
 DR
 XX Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.
 XX
 XX Disclosure; Page 114-117; 140pp; English.
 PS
 CC The invention relates to inducing an immune response against autologous

CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence
 XX

SQ Sequence 717 AA;

Query Match 100.0%; Score 74; DB 7; Length 717;

Best Local Similarity 100.0%; Pred. No. 6.5e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

678 QYIKANSKFIGITEL 692

Db

RESULT 188

AA92637

ID AAY92637 standard; protein; 750 AA.

AC AAY92637;

XX

DT 10-AUG-2000 (first entry)

XX

DE Mutant human prostate specific membrane antigen construct, hPSM2.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX

OS Homo sapiens.

OS Synthetic.

XX

PH Key Location/Qualifiers

FT Peptide 21..41

FT /label= P30

FT /note= "foreign epitope"

FT Peptide 91..105

FT /label= P2

FT /note= "foreign epitope"

FT

XX WO200020027-A2.

PN

XX

PD 13-APR-2000.

XX

PF 05-OCT-1999; 99WO-DK000525.

XX

PR 05-OCT-1998; 98DK-00001261.

XX

PR 20-OCT-1998; 98US-0105011P.

XX

PA (MEBI-) M & E BIOTECH AS.

XX

PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX

XX WPI; 2000-349917/30.

XX

PT Inducing immune responses to weakly immunogenic, tumor associated peptide

PT antigens for the treatment of breast and prostate cancer.

XX

PS Example 1; Page; 220pp; English.

XX

CC AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

CC The immunogenic analogues of PSM can be used in the claimed method as an

CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are

CC

CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

91 QYIKANSKFIGITEL 105

Db

RESULT 189

AA92639

ID AAY92639 standard; protein; 750 AA.

XX

AC AAY92639;

XX

DT 10-AUG-2000 (first entry)

XX

DE Mutant human prostate specific membrane antigen construct, hPSM5.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX

OS Homo sapiens.

OS Synthetic.

XX

PH Key Location/Qualifiers

FT Peptide 21..41

FT /label= P30

FT /note= "foreign epitope"

FT Peptide 305..319

FT /label= P2

FT /note= "foreign epitope"

FT

XX WO200020027-A2.

XX

PN

XX

PD 13-APR-2000.

XX

PF 05-OCT-1999; 99WO-DK000525.

XX

PR 05-OCT-1998; 98DK-00001261.

XX

PR 20-OCT-1998; 98US-0105011P.

XX

PA (MEBI-) M & E BIOTECH AS.

XX

PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX

XX WPI; 2000-349917/30.

XX

PT Inducing immune responses to weakly immunogenic, tumor associated peptide

PT antigens for the treatment of breast and prostate cancer.

XX

Example 1; Page; 220pp; English.

PS AAY92627-49 are mutant immunogenized human prostate specific membrane
 XX antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 305 QYIKANSKFIGITEL 319

RESULT 190

AAY92628

ID AAY92628 standard; protein; 750 AA.

XX AAY92628;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM6.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FH Peptide 21..41

FT /label= P30

FT /note= "foreign epitope"

FT Peptide

FT /label= P2

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15

Db 448 QYIKANSKFIGITEL 462

RESULT 191

AAY92631

ID AAY92631 standard; protein; 750 AA.

XX AAY92631;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM1.6.

XX Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FH Peptide 24..38

FT /label= P2

FT /note= "foreign epitope"

FT Peptide

FT /label= P30

FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.


```

XX FH Key Location/Qualifiers
XX FT Peptide 17. .31
XX FT /label= P2
XX FT /note= "foreign epitope"
XX FT Peptide 32. .52
XX FT /label= P30
XX FT /note= "foreign epitope"
XX PN WO200020027-A2.
XX XX
XX PD 13-APR-2000.
XX XX
XX PF 05-OCT-1999; 99WO-DK000525.
XX PF
XX PR 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX PA (MEBI-) M & E BIOTECH AS.
XX XX
XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX PI Gautam A, Birk P, Karlsson G;
XX XX
XX DR WPI; 2000-349917/30.
XX XX
XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
XX PT antigens for the treatment of breast and prostate cancer.
XX PS Example 1; Page; 220pp; English.
XX XX
XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
XX CC The immunogenic analogues of PSM can be used in the claimed method as an
XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
XX CC binding regions and cysteine residues involved in disulfide bonds are
XX CC preserved in the immunogenized forms. The method is used for inducing
XX CC immune responses against weakly immunogenic cell-associated peptide
XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX CC simultaneous presentation by antigen producing cells (APCs) of the
XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX CC group derived from the PA and/or at least 1 B-cell group derived from the
XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is
XX CC foreign to the animal. Analogues of human PSM, human Her2 and
XX CC human/murine FGF8b comprising a substantial part of all known and
XX CC predicted CTL and B-cell epitopes of the respective PA and including at
XX CC least one foreign T helper epitope are also claimed. The method is used
XX CC to treat prostate, prostate/breast or breast cancer when the PA is human
XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187
XX CC of the specification
XX SQ Sequence 750 AA;
XX
XX Query Match 100.0%; Score 74; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX Db | | | | | | | | | |
XX 17 QYIKANSKFIGITEL 31
XX
XX RESULT 194
XX AAY92632
XX ID AAY92632 standard; protein; 750 AA.
XX AC AAY92632;
XX XT 10-AUG-2000 (first entry)
XX XX
XX DE Mutant human prostate specific membrane antigen construct, hPSM1.8.

```

```

XX XX
XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.
XX OS Homo sapiens.
XX OS Synthetic.
XX FH Key Location/Qualifiers
XX FT Peptide 24. .38
XX FT /label= P2
XX FT /note= "foreign epitope"
XX FT Peptide 607. .627
XX FT /label= P30
XX FT /note= "foreign epitope"
XX XX
XX PN WO200020027-A2.
XX XX
XX PD 13-APR-2000.
XX XX
XX PF 05-OCT-1999; 99WO-DK000525.
XX PF
XX PR 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX PA (MEBI-) M & E BIOTECH AS.
XX XX
XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX PI Gautam A, Birk P, Karlsson G;
XX XX
XX DR WPI; 2000-349917/30.
XX XX
XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
XX PT antigens for the treatment of breast and prostate cancer.
XX PS Example 1; Page; 220pp; English.
XX XX
XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
XX CC The immunogenic analogues of PSM can be used in the claimed method as an
XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
XX CC binding regions and cysteine residues involved in disulfide bonds are
XX CC preserved in the immunogenized forms. The method is used for inducing
XX CC immune responses against weakly immunogenic cell-associated peptide
XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX CC simultaneous presentation by antigen producing cells (APCs) of the
XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX CC group derived from the PA and/or at least 1 B-cell group derived from the
XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is
XX CC foreign to the animal. Analogues of human PSM, human Her2 and
XX CC human/murine FGF8b comprising a substantial part of all known and
XX CC predicted CTL and B-cell epitopes of the respective PA and including at
XX CC least one foreign T helper epitope are also claimed. The method is used
XX CC to treat prostate, prostate/breast or breast cancer when the PA is human
XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187
XX CC of the specification
XX SQ Sequence 750 AA;
XX
XX Query Match 100.0%; Score 74; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 6.8e-05;
XX Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 QYIKANSKFIGITEL 15
XX Db | | | | | | | | | |
XX 24 QYIKANSKFIGITEL 38
XX
XX RESULT 195
XX AAY92638

```

ID AAY92638 standard; protein; 750 AA.
 AC AAY92638;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM3.1.
 XX
 DE Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 XX
 FH Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 213..227
 FT /label= P2
 FT /note= "foreign epitope"
 FT
 XX WO200020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 PI
 XX WPI; 2000-349917/30.
 XX
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX Sequence 750 AA;
 SQ

Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 Db 213 QYIKANSKFIGITEL 227
 RESULT 196
 AAY92640
 ID AAY92640 standard; protein; 750 AA.
 XX
 XX AAY92640;
 AC
 XX 10-AUG-2000 (first entry)
 DT
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM8.0.
 XX
 DE Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 XX
 FH Key Location/Qualifiers
 FT Peptide 606..620
 FT /label= P2
 FT /note= "foreign epitope"
 FT
 XX WO200020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 PI
 XX WPI; 2000-349917/30.
 XX
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
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 PS Example 1; Page; 220pp; English.
 XX
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 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX Sequence 750 AA;
 SQ

Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 606 QYIKANSKFIGITEL 620

RESULT 197

AA92630
 ID AAY92630 standard; protein; 750 AA.

XX AC AAY92630;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM10.1.
 XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.
 OS Synthetic.

XX Key Location/Qualifiers
 FH Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT 674..688
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
 |||||
 Db 674 QYIKANSKFIGITEL 688

RESULT 198

AA92633
 ID AAY92633 standard; protein; 750 AA.

XX AC AAY92633;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM1.10.
 XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.
 OS Synthetic.

XX Key Location/Qualifiers
 FH Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT 673..693
 FT /label= P30
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 Db 24 QYIKANSKFIGITEL 38
 RESULT 199
 AA92646
 ID AAY92646 standard; protein; 750 AA.
 AC AAY92646;
 XX
 DT 10-AUG-2000 (first entry)
 DE Mutant human prostate specific membrane antigen construct, hPSM10.3.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 210..230
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 674..688
 FT /label= P2
 FT /note= "foreign epitope"
 XX
 WO200020027-A2.
 PN
 PD 13-APR-2000.
 XX
 PF 05-OCT-1999; 99WO-DK000525.
 XX
 PR 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page: 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15
 Db 674 QYIKANSKFIGITEL 688

RESULT 200

AA92634
 ID AAY92634 standard; protein; 750 AA.

AC AAY92634;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM1.2.

KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.

OS Synthetic.

FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"

FT Peptide 87..107
 FT /label= P30
 FT /note= "foreign epitope"

WO200020027-A2.

PN
 PD 13-APR-2000.

XX
 PF 05-OCT-1999; 99WO-DK000525.

XX
 PR 05-OCT-1998; 98DK-00001261.

XX
 PR 20-OCT-1998; 98US-0105011P.

XX
 PA (MEBI-) M & E BIOTECH AS.

XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX
 WPI; 2000-349917/30.

XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane

XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

XX CC The immunogenic analogues of PSM can be used in the claimed method as an

XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

XX CC binding regions and cysteine residues involved in disulfide bonds are

XX CC preserved in the immunogenized forms. The method is used for inducing

XX CC immune responses against weakly immunogenic cell-associated peptide

XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

XX CC simultaneous presentation by antigen producing cells (APCs) of the

XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

XX CC group derived from the PA and/or at least 1 B-cell group derived from the

XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is

XX CC foreign to the animal. Analogues of human PSM, human Her2 and

XX CC human/murine FGF8b comprising a substantial part of all known and

XX CC predicted CTL and B-cell epitopes of the respective PA and including at

XX CC least one foreign T helper epitope are also claimed. The method is used

XX CC to treat prostate, prostate/breast or breast cancer when the PA is human

XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187

XX CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

Db 24 QYIKANSKFIGITEL 38

RESULT 201

AAY92635

ID AAY92635 standard; protein; 750 AA.

XX AC AAY92635;

XX 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM1.3.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;

XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers

XX FT Peptide 24..38

XX FT /label= P2

XX FT /note= "foreign epitope"

XX FT Peptide 210..230

XX FT /label= P30

XX FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide

XX FT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane

XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

XX CC The immunogenic analogues of PSM can be used in the claimed method as an

XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

XX CC binding regions and cysteine residues involved in disulfide bonds are

XX CC preserved in the immunogenized forms. The method is used for inducing

XX CC immune responses against weakly immunogenic cell-associated peptide

XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

XX CC simultaneous presentation by antigen producing cells (APCs) of the

XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

XX CC group derived from the PA and/or at least 1 B-cell group derived from the

XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is

XX CC foreign to the animal. Analogues of human PSM, human Her2 and

XX CC human/murine FGF8b comprising a substantial part of all known and

XX CC predicted CTL and B-cell epitopes of the respective PA and including at

XX CC least one foreign T helper epitope are also claimed. The method is used

XX CC to treat prostate, prostate/breast or breast cancer when the PA is human

XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187

XX CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 74; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 6.8e-05;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

Db 24 QYIKANSKFIGITEL 38

RESULT 202

AAY92643

ID AAY92643 standard; protein; 750 AA.

XX AC AAY92643;

XX 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM1.0.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;

XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

XX OS Synthetic.

XX FH Key Location/Qualifiers

XX FT Peptide 24..38

XX FT /label= P2

XX FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.
 XX (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38
 RESULT 203
 AAY92636
 ID AAY92636 standard; protein; 750 AA.
 AC AAY92636;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM1.5.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 301..321
 FT /label= P30
 FT /note= "foreign epitope"
 FT
 XX

PN WO200020027-A2.
 XX
 PD 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 PR 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 XX
 DR Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.
 PT
 PT Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 74; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 6.8e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 24 QYIKANSKFIGITEL 38
 RESULT 204
 AAY92641
 ID AAY92641 standard; protein; 750 AA.
 XX
 AC AAY92641;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM10.0.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers

```

FT Peptide 674...688
FT /label= P2
FT /note= "foreign epitope"
XX
PN W0200020027-A2.
XX
PD 13-APR-2000.
XX
PF 05-OCT-1999; 99WO-DK000525.
XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
DR WPI; 2000-349917/30.
XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
PS Example 1; Page; 220pp; English.
XX
CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX
SQ Sequence 750 AA;
Query Match 100.0%; Score 74; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 6.8e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 674 QYIKANSKFIGITEL 688

RESULT 205
AAY92644
ID AAY92644 standard; protein; 750 AA.
XX
AC AAY92644;
XX
DT 10-AUG-2000 (first entry)
XX
DE Mutant human prostate specific membrane antigen construct, hPSM6.3.
XX
KW Prostate specific membrane antigen; immunogenized construct; mutant;
KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
KW prostate cancer; cell-associated peptide antigen; foreign epitope.
XX

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OS Homo sapiens.
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Peptide 210..230
FT /label= P30
FT /note= "foreign epitope"
FT Peptide 448..462
FT /label= P2
FT /note= "foreign epitope"
XX
PN W0200020027-A2.
XX
PD 13-APR-2000.
XX
PF 05-OCT-1999; 99WO-DK000525.
XX
PR 05-OCT-1998; 98DK-00001261.
PR 20-OCT-1998; 98US-0105011P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI Gautam A, Birk P, Karlsson G;
XX
DR WPI; 2000-349917/30.
XX
PT Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX
PS Example 1; Page; 220pp; English.
XX
CC AAY92627-49 are mutant immunogenized human prostate specific membrane
CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC The immunogenic analogues of PSM can be used in the claimed method as an
CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC binding regions and cysteine residues involved in disulfide bonds are
CC preserved in the immunogenized forms. The method is used for inducing
CC immune responses against weakly immunogenic cell-associated peptide
CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC simultaneous presentation by antigen producing cells (APCs) of the
CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC group derived from the PA and/or at least 1 B-cell group derived from the
CC cell-associated PA; and (2) at least 1 first T helper cell group which is
CC foreign to the animal. Analogues of human PSM, human Her2 and
CC human/murine FGF8b comprising a substantial part of all known and
CC predicted CTL and B-cell epitopes of the respective PA and including at
CC least one foreign T helper epitope are also claimed. The method is used
CC to treat prostate, prostate/breast or breast cancer when the PA is human
CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC from the wild type human PSM (AAY92619), which appears on pages 184-187
CC of the specification
XX
SQ Sequence 750 AA;
Query Match 100.0%; Score 74; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 6.8e-05;
Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 QYIKANSKFIGITEL 15
Db 448 QYIKANSKFIGITEL 462

RESULT 206
ADL90427
ID ADL90427 standard; protein; 872 AA.
XX
AC ADL90427;
XX
DT 17-JUN-2004 (first entry)

```

XX DE Clostridial neurotoxin amino acid sequence SEQ ID NO:145.
 XX DE single chain polypeptide; clostridial neurotoxin light chain;
 KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;
 KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;
 KW botulinum; tetanus.
 XX OS Clostridium tetani.
 XX PN WO2004024909-A2.
 XX PD 25-MAR-2004.
 XX PF 12-SEP-2003; 2003WO-GB003824.
 XX PR 12-SEP-2002; 2002US-00241596.
 XX PA (HEAL-) HEALTH PROTECTION AGENCY.
 XX PI Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;
 PI Wayne J;
 XX DR WPI; 2004-270039/25.
 XX DR N-PSDB; ADL90426.
 XX PT New single chain polypeptides comprising clostridial neurotoxin light and
 PT heavy chains, useful as positive controls for toxin assays, or for
 PT developing vaccines against clostridial toxin.
 XX SQ Claim 1; SEQ ID NO 145; 588pp; English.
 XX CC The present invention describes a single chain polypeptide comprising
 CC clostridial neurotoxin light and heavy chains. The single chain
 CC polypeptide comprises 2 domains: the first domain is a clostridial
 CC neurotoxin light chain, or its fragment or variant, which is capable of
 CC cleaving one or more vesicle or plasma membrane associated proteins
 CC essential to exocytosis; the second domain is a clostridial neurotoxin
 CC heavy chain H-N portion, or its fragment or variant, which is capable of
 CC translocating the polypeptide into a cell and/or increasing the
 CC solubility of the polypeptide compared to the solubility of the first
 CC domain on its own. The second domain lacks a functional C-terminal part
 CC of a clostridial neurotoxin heavy chain, designated H-C, which renders
 CC the polypeptide incapable of binding to cell surface receptors that are
 CC the natural cell surface receptors to which native clostridial neurotoxin
 CC binds. Also described is a nucleic acid molecule encoding the single
 CC chain polypeptide described above. The single chain polypeptide has
 CC antibacterial activity, and can be used in vaccines. The single chain
 CC polypeptides can be used as positive controls for toxin assays, as
 CC reagent components for the synthesis of therapeutic molecules, or for
 CC developing vaccines against clostridial toxin. The polypeptides are also
 CC useful as non-toxic standards for the assessment and development of in
 CC vitro assays for detection of functional botulinum or tetanus neurotoxins
 CC in foodstuffs or environmental samples. The present sequence is used in
 CC the exemplification of the present invention.
 XX SQ Sequence 872 AA;
 Query Match 100.0%; Score 74; DB 8; Length 872;
 Best Local Similarity 100.0%; Pred. No. 86-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 823 QYIKANSKFIGITEL 837
 RESULT 207
 ADL90085
 ID ADL90085 standard; protein; 875 AA.
 XX AC ADL90085;
 XX PR 12-SEP-2002; 2002US-00241596.
 XX XX

DT 17-JUN-2004 (first entry)
 XX Tetanus toxin protein, SEQ ID 25.
 DE Immune response; immunoglobulin; Ig; tetanus toxin.
 KW Unidentified.
 XX OS WO2004027049-A2.
 XX PN 01-APR-2004.
 XX PD 18-SEP-2003; 2003WO-US030188.
 XX PF 20-SEP-2002; 2002US-0412219P.
 XX PR 14-MAR-2003; 2003WO-US007995.
 XX PA (ASTR-) ASTRAL INC.
 XX PI Bot A, Wang L, Smith D, Phillips B;
 PI WPI; 2004-295415/27.
 XX DR Generating an immune response to an antigen, useful for generating
 DR desired T cell responses comprising administering an immunoglobulin having
 DR one peptide epitope of the antigen attached to the immunoglobulin.
 XX PT Disclosure; Fig 1J; 154pp; English.
 XX CC The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to the patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX SQ Sequence 875 AA;
 Query Match 100.0%; Score 74; DB 8; Length 875;
 Best Local Similarity 100.0%; Pred. No. 8.1e-05;
 Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 QYIKANSKFIGITEL 15
 |||||
 Db 390 QYIKANSKFIGITEL 404
 RESULT 208
 ADL90425
 ID ADL90425 standard; protein; 879 AA.
 XX AC ADL90425;
 XX DT 17-JUN-2004 (first entry)
 XX DE Clostridial neurotoxin amino acid sequence SEQ ID NO:143.
 XX single chain polypeptide; clostridial neurotoxin light chain;
 KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;
 KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;
 KW botulinum; tetanus.
 XX OS Clostridium tetani.
 XX PN WO2004024909-A2.
 XX PD 25-MAR-2004.
 XX PF 12-SEP-2003; 2003WO-GB003824.
 XX PR 12-SEP-2002; 2002US-00241596.
 XX XX

(UNLO) IMPERIAL COLLEGE SCI TECHNOLOGY & MED.

Fairweather NF, Sinha K;

WPI; 2001-123014/13.

New polypeptide, useful for treating infections of Clostridium tetani, comprises tetanus toxin fragment with a mutation in a loop region,.

Disclosure; Page 39; 43pp; English.

The present sequence is given in a specification relating to a novel polypeptide comprising tetanus toxin (TeNT) fragment C or its immunogenic fragment, containing a mutation in a loop region. The mutation results in a reduction in the binding of TeNT fragment C or its immunogenic fragment to gangliosides and primary motoneurons, and/or a reduction in the ability of TeNT fragment C or its immunogenic fragment to undergo retrograde transport. The polypeptide is useful for treating, preventing and reducing the susceptibility to Clostridium tetani infection in a human or animal, and also for producing antibodies which recognise groups within TeNT polypeptides. Antibody produced against the polypeptide is also useful for treating Clostridium tetani infection

Sequence 1315 AA;

Query Match 100.0%; Score 74; DB 4; Length 1315;

Best Local Similarity 100.0%; Pred. No. 0.00013;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

830 QYIKANSKFIGITEL 844

RESULT 211

ADL90423

ID ADL90423 standard; protein; 1315 AA.

AC ADL90423;

DT 17-JUN-2004 (first entry)

DE Clostridial neurotoxin amino acid sequence SEQ ID NO:141.

DE single chain polypeptide; clostridial neurotoxin light chain;

KW clostridial neurotoxin heavy chain; Clostridium; neurotoxin; exocytosis;

KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;

KW botulinum; tetanus.

OS Clostridium tetani.

PN WO2004024909-A2.

PD 25-MAR-2004.

PF 12-SEP-2003; 2003WO-GB003824.

PR 12-SEP-2002; 2002US-00241596.

PA (HEAL-) HEALTH PROTECTION AGENCY.

PI Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P; Wayne J;

PI WPI; 2004-270039/25.

DR N-PSDB; ADL90422.

XX New single chain polypeptides comprising clostridial neurotoxin light and heavy chains, useful as positive controls for toxin assays, or for developing vaccines against clostridial toxin.

PS Disclosure; SEQ ID NO 141; 588pp; English.

CC The present invention describes a single chain polypeptide comprising clostridial neurotoxin light and heavy chains. The single chain polypeptide comprises 2 domains; the first domain is a clostridial neurotoxin light chain, or its fragment or variant, which is capable of cleaving one or more vesicle or plasma membrane associated proteins essential to exocytosis; the second domain is a clostridial neurotoxin heavy chain H-N portion, or its fragment or variant, which is capable of translocating the polypeptide into a cell and/or increasing the solubility of the polypeptide compared to the solubility of the first domain on its own. The second domain lacks a functional C-terminal part of a clostridial neurotoxin heavy chain, designated H-C, which renders the polypeptide incapable of binding to cell surface receptors that are the natural cell surface receptors to which native clostridial neurotoxin binds. Also described is a nucleic acid molecule encoding the single chain polypeptide described above. The single chain polypeptide has antibacterial activity, and can be used in vaccines. The single chain polypeptides can be used as positive controls for toxin assays, as reagent components for the synthesis of therapeutic molecules, or for developing vaccines against clostridial toxin. The polypeptides are also useful as non-toxic standards for the assessment and development of in vitro assays for detection of functional botulinum or tetanus neurotoxins in foodstuffs or environmental samples. The present sequence is used in the exemplification of the present invention.

SQ Sequence 1315 AA;

Query Match 100.0%; Score 74; DB 8; Length 1315;

Best Local Similarity 100.0%; Pred. No. 0.00013;

Matches 15; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 QYIKANSKFIGITEL 15

|||||

830 QYIKANSKFIGITEL 844

Search completed: January 26, 2005, 07:08:38

Job time : 102.333 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:09 ; Search time 18.0833 Seconds
(without alignments)
111.736 Million cell updates/sec

Title: US-09-806-703A-14

Perfect score: 112

Sequence: 1 FNNFTVSWFLRVPKVSASHLE 21

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

PIR_79:*

1: PIR1:*

2: PIR2:*

3: PIR3:*

4: PIR4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	112	100.0	1315	1 BTCLTN	tentoxilysin (EC 3
2	62	55.4	1268	2 S33411	botulinum neurotox
3	61	54.5	366	2 S48110	neurotoxin type F
4	61	54.5	369	2 S48109	neurotoxin type F
5	61	54.5	1274	2 I40813	neurotoxin type F
6	61	54.5	1297	2 S3791	neurotoxin - Clost
7	59	52.7	1296	1 BTCLAB	botulinum neurotox
8	58	51.8	1291	1 I48940	botulinum neurotox
9	58	51.8	1291	2 I40631	non-proteolytic bo
10	56	50.0	367	2 S48106	neurotoxin type E
11	56	50.0	1251	2 JH0256	botulinum neurotox
12	56	50.0	1252	2 S21178	botulinum neurotox
13	56	50.0	1296	2 I40645	botulinum neurotox
14	52	46.4	449	2 S23158	nucleocapsid prote
15	52	46.4	464	1 MNVUM	nonstructural prot
16	52	46.4	467	1 MNVUM1	nonstructural prot
17	51	45.5	1196	2 JQ1467	toxin, nontoxic co
18	51	45.5	1196	2 S46430	botulinum neurotox
19	49	43.8	276	2 T33493	hypothetical prote
20	48	42.9	504	2 T47446	hypothetical prote
21	48	42.9	1285	2 S70582	botulinum neurotox
22	48	42.9	1291	2 A49777	botulinum neurotox
23	48	42.9	1291	2 S46431	botulinum neurotox
24	47.5	42.4	1276	2 S11455	botulinum neurotox
25	47	42.0	359	2 F87937	protein F14B6.6 [i
26	47	42.0	385	2 T20879	hypothetical prote
27	47	42.0	469	2 B37837	probable alpha-amy
28	46	41.1	322	2 T25966	hypothetical prote
29	46	41.1	442	2 I47074	gene CD5 protein -

ALIGNMENTS

RESULT 1

BTCLTN

tentoxilysin (EC 3.4.24.68) precursor - Clostridium tetani

N;Alternate names: tetanus neurotoxin

C;Species: Clostridium tetani

C;Date: 31-Mar-1988 #sequence revision 31-Mar-1988 #text change 09-Jul-2004

C;Accession: A25689; A25757; A25194; B25194; A60759; S69348; S03364

R;Eisel, U.; Jarausch, W.; Goretzki, K.; Henschen, A.; Engels, J.; Weller, U.; Hudel, M.

EMBO J. 5, 2495-2502, 1986

A;Title: Tetanus toxin: primary structure, expression in E. coli, and homology with bot

A;Reference number: A25689; MUID:87053814; PMID:3536478

A;Accession: A25689

A;Molecule type: DNA

A;Residues: 1-1315 <EIS>

A;Cross-references: UNIPROT:P04958; GB:X04436; NID:g40769; PIDN:CAA28033.1; PID:g40770

R;Fairweather, N.F.; Lyness, V.A.

Nucleic Acids Res. 14, 7805-7812, 1986

A;Title: The complete nucleotide sequence of tetanus toxin.

A;Reference number: A25757; MUID:87040747; PMID:3774547

A;Accession: A25757

A;Molecule type: DNA

A;Residues: 1-1315 <FAI>

A;Cross-references: GB:X06214; NID:g40773; PIDN:CAA29564.1; PID:g40774

A;Experimental source: strain CN3911

R;Fairweather, N.F.; Lyness, V.A.; Pickard, D.J.; Allen, G.; Thomson, R.O.

J. Bacteriol. 165, 21-27, 1986

A;Title: Cloning, nucleotide sequencing, and expression of tetanus toxin fragment C in

A;Reference number: A25194; MUID:86085672; PMID:3510187

A;Accession: A25194

A;Molecule type: DNA

A;Residues: 743-1315 <FA2>

A;Cross-references: GB:M12739; NID:g14920; PIDN:AAA23282.1; PID:g144921

A;Accession: B25194

A;Molecule type: protein

A;Residues: 865-894 <FA3>

R;Matsuda, M.; Lei, D.L.; Sugimoto, N.; Ozutsumi, K.; Okabe, T.

Infect. Immun. 57, 3588-3593, 1989

A;Title: Isolation, purification, and characterization of fragment B, the NH-2-terminal

A;Reference number: A60759; MUID:90035436; PMID:2478476

A;Accession: A60759

A;Molecule type: protein

A;Residues: 461-475 <MAT>

R;Demotz, S.; Lanzavecchia, L.; Eisel, U.; Niemann, H.; Widmann, C.; Corradin, G.

J. Immunol. 142, 394-402, 1989

A;Title: Delineation of several DR-restricted tetanus toxin T cell epitopes.

A;Reference number: JS0098; MUID:89093918; PMID:2463305

A;Contents: annotation: epitope region

R;Schiaivo, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B.

Nature 359, 832-835, 1992

A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteoly

A;Reference number: S27125; MUID:93063293; PMID:1331807

A;Contents: annotation

probable myb-like
unknown protein F1
progenitor toxin n
botulinum toxin no
hypothetical prote
hypothetical prote
hypothetical prote
conserved hypotet
enterochelin ester
spheroidene monoox
probable membrane
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote
hypothetical prote

R;de Filippis, V.; Vangelista, L.; Schiavo, G.; Tonello, F.; Montecucco, C.
 Eur. J. Biochem. 229, 61-69, 1995
 A;Title: Structural studies on the zinc-endopeptidase light chain of tetanus neurotoxin.
 A;Reference number: S69348; MUID:95262688; PMID:7744050
 A;Accession: S69348

A;Molecule type: protein
 A;Residues: 2-31 <DEF>
 C;Comment: The source of this protein was an extrachromosomal plasmid.
 C;Comment: The precursor is cleaved by endogenous proteinase activity to form light (fragment A) and heavy (fragment B) chains. The amino end of the heavy chain (fragment B) forms a lipid bilayer. Fragment C binds to ganglionic presynaptic neurons. It inhibits neurotransmitter release by proteolytic cleavage of synaptobrevin.
 C;Function:
 A;Description: blocks neuroexocytosis via hydrolysis of a Gln-Phe peptide bond in synaptobrevin.
 C;Superfamily: tetanus toxin

C;Keywords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc
 F;2-457/Product: tentoxylisin light chain (fragment A) #status predicted <TTL>
 F;461-1315/Product: tentoxylisin heavy chain (fragment B.C) #status experimental <TTH>
 F;461-864/Domain: channel forming (fragment B) #status predicted <TXB>
 F;865-1315/Domain: ganglioside binding (fragment C) #status predicted <TXC>
 F;233,237/Binding site: zinc (His) #status predicted
 F;234/Active site: Glu #status predicted

Query Match 100.0%; Score 112; DB 1; Length 1315;
 Best Local Similarity 100.0%; Pred. No. 4.7e-10; Indels 0; Gaps 0;
 Matches 21; Conservative 0; Mismatches 0;

QY 1 FNNFTVSFWLRVPSASHLE 21

Db 947 FNNFTVSFWLRVPSASHLE 967

RESULT 2

S33411
 botulinum neurotoxin type F - Clostridium barati
 C;Species: Clostridium barati
 C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004
 C;Accession: S33411; S31860
 R;Thompson, D.E.; Hutson, R.A.; East, A.K.; Allaway, D.; Collins, M.D.; Richardson, P.T.
 FEMS Microbiol. Lett. 108, 175-182, 1993
 A;Title: Nucleotide sequence of the gene coding for Clostridium barati type F neurotoxin
 A;Reference number: S33411; MUID:93252228; PMID:8486245
 A;Accession: S33411
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 1-1268 <THO>
 A;Cross-references: UNIPROT:Q45851; EMBL:X68262; NID:G49138; PIDN:CAA48329.1; PID:G49139
 C;Superfamily: tetanus toxin
 C;Keywords: neurotoxin

Query Match 55.4%; Score 62; DB 2; Length 1268;
 Best Local Similarity 64.3%; Pred. No. 0.082; Indels 1; Gaps 0;
 Matches 9; Conservative 4; Mismatches 0;

QY 1 FNNFTVSFWLRVPS 14

Db 922 YQNFSISFWVRIPK 935

RESULT 3

S48110
 neurotoxin type F - Clostridium botulinum (fragment)
 C;Species: Clostridium botulinum
 C;Date: 14-Jul-1995 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
 C;Accession: S48110
 R;Campbell, K.D.; Collins, M.D.; East, A.K.
 J. Clin. Microbiol. 31, 2255-2262, 1993
 A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific isoforms
 A;Reference number: S48103; MUID:94013372; PMID:8408542
 A;Accession: S48110
 A;Status: preliminary; translation not shown
 A;Molecule type: DNA

A;Residues: 1-366 <CAM>
 A;Cross-references: UNIPROT:Q57236; EMBL:X70821; NID:G407792; PIDN:CAA50152.1; PID:G407792
 C;Superfamily: tetanus toxin
 C;Keywords: neurotoxin

Query Match 54.5%; Score 61; DB 2; Length 366;
 Best Local Similarity 57.1%; Pred. No. 0.032; Indels 1; Gaps 0;
 Matches 8; Conservative 5; Mismatches 0;

QY 1 FNNFTVSFWLRVPS 14

Db 297 YQNFSISFWVRIPK 310

RESULT 4

S48109
 neurotoxin type F - Clostridium botulinum (fragment)
 C;Species: Clostridium botulinum
 C;Date: 12-Feb-1998 #sequence_revision 20-Feb-1998 #text_change 09-Jul-2004
 C;Accession: S48109
 R;Campbell, K.D.; Collins, M.D.; East, A.K.
 J. Clin. Microbiol. 31, 2255-2262, 1993
 A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific isoforms
 A;Reference number: S48103; MUID:94013372; PMID:8408542
 A;Accession: S48109
 A;Status: preliminary; nucleic acid sequence not shown; translation not shown
 A;Molecule type: DNA
 A;Residues: 1-369 <CAM>
 A;Cross-references: UNIPROT:P30996; EMBL:X70820; NID:G407790; PIDN:CAA50151.1; PID:G407790
 A;Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1993
 C;Superfamily: tetanus toxin

Query Match 54.5%; Score 61; DB 2; Length 369;
 Best Local Similarity 57.1%; Pred. No. 0.032; Indels 1; Gaps 0;
 Matches 8; Conservative 5; Mismatches 0;

QY 1 FNNFTVSFWLRVPS 14

Db 297 YQNFSISFWVRIPK 310

RESULT 5

I40813
 neurotoxin type F - Clostridium botulinum
 C;Species: Clostridium botulinum
 C;Date: 16-Aug-1996 #sequence_revision 16-Aug-1996 #text_change 09-Jul-2004
 C;Accession: I40813; S48108
 R;East, A.K.; Richardson, P.T.; Allaway, D.; Collins, M.D.; Roberts, T.A.; Thompson, D.P.
 FEMS Microbiol. Lett. 96, 225-230, 1992
 A;Title: Sequence of the gene encoding type F neurotoxin of Clostridium botulinum.
 A;Reference number: I40644
 A;Accession: I40813
 A;Status: preliminary; translated from GB/EMBL/DBJ
 A;Molecule type: DNA
 A;Residues: 1-1274 <RES>
 A;Cross-references: UNIPROT:P30996; GB:M92906; NID:G144866; PIDN:AAA23263.1; PID:G144866
 R;Campbell, K.D.; Collins, M.D.; East, A.K.
 J. Clin. Microbiol. 31, 2255-2262, 1993
 A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific isoforms
 A;Reference number: S48103; MUID:94013372; PMID:8408542
 A;Accession: S48108
 A;Status: preliminary; translation not shown
 A;Molecule type: DNA
 A;Residues: 634-1002 <CAM>
 A;Cross-references: EMBL:X70816; NID:G407788; PIDN:CAA50147.1; PID:G407788
 C;Superfamily: tetanus toxin
 C;Keywords: neurotoxin

Query Match 54.5%; Score 61; DB 2; Length 1274;
 Best Local Similarity 57.1%; Pred. No. 0.12; Indels 1; Gaps 0;
 Matches 8; Conservative 5; Mismatches 0;

QY 1 FNNFTVSFWLRVPS 14

A;Accession: S68220
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-12 <FU>
A;Cross-references: EMBL:D67030; DBJ:D50421; NID:g2160224
R;Betley, M.J.; Somers, E.; DasGupta, B.R.
Biochem. Biophys. Res. Commun. 162, 1388-1395, 1989
A;Title: Characterization of botulinum type A neurotoxin gene: delineation of the N-term
A;Reference number: A33401; MUID:89350959; PMID:2669749
A;Accession: A33401
A;Molecule type: DNA
A;Residues: 1-35 <BET>
A;Cross-references: GB:M27892; NID:g144880; PIDN:AAA23269.1; PID:g551776

J. Clin. Microbiol. 31, 2255-2262, 1993
A;Title: Gene probes for identification of the botulin neurotoxin gene and specific i
A;Reference number: S48103; MUID:94013372; PMID:8408542
A;Accession: S48105

A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 634-994 <CAM>
 A;Cross-references: EMBL:X70817; NID:g407782; PIDN:CAA50148.1; PID:g407783
 A;Experimental source: proteolytic type B, strain NCTC 7273
 R;Szabo, E.A.; Pemberton, J.M.; Desmarchellier, P.M.
 submitted to the EMBL Data Library, April 1992
 A;Description: Partial amino acid sequence of botulinum neurotoxin type B and comparison
 A;Reference number: S21575
 A;Accession: S21575
 A;Molecule type: DNA
 A;Residues: 36-217, 'G', 219-224, 'S', 226-246 <SZA>
 A;Cross-references: EMBL:Z11934; NID:g40383; PIDN:CAA7991.1; PID:g40384
 R;Kurazono, H.; Mochida, S.; Binz, T.; Eisel, U.; Quanz, M.; Grebenstein, O.; Wernars, K.
 J. Biol. Chem. 267, 14721-14729, 1992
 A;Title: Minimal essential domains specifying toxicity of the light chains of tetanus toxin
 A;Reference number: A42871; MUID:92340509; PMID:1634516
 A;Accession: A42871
 A;Status: nucleic acid sequence not shown
 A;Molecule type: mRNA
 A;Residues: 1-313, 'S', 315-451 <KUR>
 A;Experimental source: strain Okra
 R;DasGupta, B.R.; Datta, A.
 Biochimie 70, 811-817, 1988
 A;Title: Botulinum neurotoxin type B (strain 657): partial sequence and similarity with
 A;Reference number: S07155; MUID:89000987; PMID:3139097
 A;Accession: S07155
 A;Molecule type: protein
 A;Residues: 2-29, 'M', 31-45 <DAS>
 A;Accession: S08562
 A;Molecule type: protein
 A;Residues: 442-463, 'R', 465-467 <DA2>
 R;Schmidt, J.J.; Sathyanarayanan, V.; DasGupta, B.R.
 Arch. Biochem. Biophys. 238, 544-548, 1985
 A;Title: Partial amino acid sequences of botulinum neurotoxins types B and E.
 A;Reference number: S07128; MUID:85197963; PMID:3888113
 A;Accession: S07128
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 2-16 <SCH1>
 A;Accession: S08573
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 2-17 <SCH2>
 A;Accession: S08574
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 442-459 <SCH3>
 R;Schlavo, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B.R.
 Nature 359, 832-835, 1992
 A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteolytic
 A;Reference number: S27125; MUID:93063293; PMID:1331807
 A;Contents: annotation
 C;Comment: Botulinum neurotoxins inhibit neurotransmitter release from cholinergic synapses
 C;Genetics:
 A;Gene: bont/b
 C;Function:
 A;Description: catalyzes hydrolysis of a Gln-Phe peptide bond in synaptobrevin 2
 C;Superfamily: tetanus toxin
 C;Keywords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc
 F;2-441/Product: bontoxilysin B light chain #status experimental <LIGHT>
 F;442-1291/Product: bontoxilysin B heavy chain #status experimental <LIGHT>
 F;230.234/Binding site: zinc (His) #status predicted
 F;231/Active site: Glu #status predicted
 Query Match 51.8%; Score 58; DB 1; Length 1291;
 Best Local Similarity 64.3%; Pred. No. 0.38;
 Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;
 QY 1 FNNFTVSPWLRVPK 14
 DB 923 FLDFSVSPWLRVPK 936
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 634-994 <CAM>
 A;Cross-references: EMBL:X70817; NID:g407782; PIDN:CAA50148.1; PID:g407783
 A;Experimental source: proteolytic type B, strain NCTC 7273
 R;Szabo, E.A.; Pemberton, J.M.; Desmarchellier, P.M.
 submitted to the EMBL Data Library, April 1992
 A;Description: Partial amino acid sequence of botulinum neurotoxin type B and comparison
 A;Reference number: S21575
 A;Accession: S21575
 A;Molecule type: DNA
 A;Residues: 36-217, 'G', 219-224, 'S', 226-246 <SZA>
 A;Cross-references: EMBL:Z11934; NID:g40383; PIDN:CAA7991.1; PID:g40384
 R;Kurazono, H.; Mochida, S.; Binz, T.; Eisel, U.; Quanz, M.; Grebenstein, O.; Wernars, K.
 J. Biol. Chem. 267, 14721-14729, 1992
 A;Title: Minimal essential domains specifying toxicity of the light chains of tetanus toxin
 A;Reference number: A42871; MUID:92340509; PMID:1634516
 A;Accession: A42871
 A;Status: nucleic acid sequence not shown
 A;Molecule type: mRNA
 A;Residues: 1-313, 'S', 315-451 <KUR>
 A;Experimental source: strain Okra
 R;DasGupta, B.R.; Datta, A.
 Biochimie 70, 811-817, 1988
 A;Title: Botulinum neurotoxin type B (strain 657): partial sequence and similarity with
 A;Reference number: S07155; MUID:89000987; PMID:3139097
 A;Accession: S07155
 A;Molecule type: protein
 A;Residues: 2-29, 'M', 31-45 <DAS>
 A;Accession: S08562
 A;Molecule type: protein
 A;Residues: 442-463, 'R', 465-467 <DA2>
 R;Schmidt, J.J.; Sathyanarayanan, V.; DasGupta, B.R.
 Arch. Biochem. Biophys. 238, 544-548, 1985
 A;Title: Partial amino acid sequences of botulinum neurotoxins types B and E.
 A;Reference number: S07128; MUID:85197963; PMID:3888113
 A;Accession: S07128
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 2-16 <SCH1>
 A;Accession: S08573
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 2-17 <SCH2>
 A;Accession: S08574
 A;Status: preliminary
 A;Molecule type: protein
 A;Residues: 442-459 <SCH3>
 R;Schlavo, G.; Benfenati, F.; Poulain, B.; Rossetto, O.; de Laureto, P.P.; DasGupta, B.R.
 Nature 359, 832-835, 1992
 A;Title: Tetanus and botulinum-B neurotoxins block neurotransmitter release by proteolytic
 A;Reference number: S27125; MUID:93063293; PMID:1331807
 A;Contents: annotation
 C;Comment: Botulinum neurotoxins inhibit neurotransmitter release from cholinergic synapses
 C;Genetics:
 A;Gene: bont/b
 C;Function:
 A;Description: catalyzes hydrolysis of a Gln-Phe peptide bond in synaptobrevin 2
 C;Superfamily: tetanus toxin
 C;Keywords: hydrolase; metalloproteinase; neurotoxin; transmembrane protein; zinc
 F;2-441/Product: bontoxilysin B light chain #status experimental <LIGHT>
 F;442-1291/Product: bontoxilysin B heavy chain #status experimental <LIGHT>
 F;230.234/Binding site: zinc (His) #status predicted
 F;231/Active site: Glu #status predicted
 Query Match 51.8%; Score 58; DB 1; Length 1291;
 Best Local Similarity 64.3%; Pred. No. 0.38;
 Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;
 QY 1 FNNFTVSPWLRVPK 14
 DB 923 FLDFSVSPWLRVPK 936

RESULT 9

I40631
 non-proteolytic botulinum neurotoxin type B precursor - Clostridium botulinum
 C;Species: Clostridium botulinum
 C;Date: 12-Aug-1996 #sequence_revision 12-Aug-1996 #text_change 09-Jul-2004
 C;Accession: I40631; S48103; S48104; S36015
 R;Hutson, R.A.; Collins, M.D.; East, A.K.; Thompson, D.E.
 Curr. Microbiol. 28, 101-110, 1994
 A;Title: Nucleotide sequence of the gene coding for non-proteolytic Clostridium botulinum
 A;Reference number: I40631; MUID:94122659; PMID:7764370
 A;Accession: I40631
 A;Status: preliminary; translated from GB/EMBL/DBJ
 A;Molecule type: DNA
 A;Residues: 1-1291 <RES>
 A;Cross-references: UNIPROT:Q08077; EMBL:X71343; NID:g256148; PIDN:CAA50482.1; PID:g256148
 R;Campbell, K.D.; Collins, M.D.; East, A.K.
 J. Clin. Microbiol. 31, 2255-2262, 1993
 A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific
 A;Reference number: S48103; MUID:94013372; PMID:8408542
 A;Accession: S48103
 A;Status: preliminary; nucleic acid sequence not shown; translation not shown
 A;Molecule type: DNA
 A;Residues: 634-761, 'E', 763-841, 'M', 843, 'T', 845, 'N', 847-994 <CAM1>
 A;Cross-references: EMBL:X70814; NID:g407778; PIDN:CAA50145.1; PID:g407779
 A;Experimental source: non-proteolytic strain 2129B (Scott)
 A;Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1993
 A;Accession: S48104
 A;Status: preliminary
 A;Molecule type: DNA
 A;Residues: 634-843, 'T', 845, 'N', 847-994 <CAM2>
 A;Cross-references: EMBL:X70819; NID:g407780; PIDN:CAA50150.1; PID:g407781
 A;Experimental source: non-proteolytic strain Eklund 2B (Colworth 229)
 C;Comment: Botulinum neurotoxin type B in these strains may possess a capable catalytic
 C;Genetics:
 A;Gene: bont/b
 C;Superfamily: tetanus toxin
 C;Keywords: metalloprotein; neurotoxin; transmembrane protein; zinc
 F;2-441/Product: botulinum neurotoxin type B light chain #status predicted <LIGHT>
 F;442-1291/Product: botulinum neurotoxin type B heavy chain #status predicted <HVY>
 F;230.234/Binding site: zinc (His) #status predicted
 F;231/Active site: Glu #status predicted
 Query Match 51.8%; Score 58; DB 2; Length 1291;
 Best Local Similarity 64.3%; Pred. No. 0.38;
 Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;
 QY 1 FNNFTVSPWLRVPK 14
 DB 923 FLDFSVSPWLRVPK 936

RESULT 10

S48106
 neurotoxin type E - Clostridium botulinum (fragment)
 C;Species: Clostridium botulinum
 C;Date: 14-Jul-1995 #sequence_revision 10-Nov-1995 #text_change 09-Jul-2004
 C;Accession: S48106
 R;Campbell, K.D.; Collins, M.D.; East, A.K.
 J. Clin. Microbiol. 31, 2255-2262, 1993
 A;Title: Gene probes for identification of the botulinum neurotoxin gene and specific
 A;Reference number: S48103; MUID:94013372; PMID:8408542
 A;Accession: S48106
 A;Status: preliminary; nucleic acid sequence not shown; translation not shown
 A;Molecule type: DNA
 A;Residues: 1-367 <CAM>
 A;Cross-references: UNIPROT:Q45861; EMBL:X70818; NID:g407784; PIDN:CAA50149.1; PID:g407784
 A;Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1993
 C;Superfamily: tetanus toxin
 C;Keywords: neurotoxin
 Query Match 50.0%; Score 56; DB 2; Length 367;
 DB 923 FLDFSVSPWLRVPK 936

A; Cross-references: EMBL:X70815; NID:g407786; PIDN:CAA50146.1; PID:g407787
A; Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1993
R; Poulet, S.; Hauser, D.; Quanz, M.; Niemann, H.; Popoff, M.R.
Biochem. Biophys. Res. Commun. 183, 107-113, 1992
A; Title: Sequences of the botulinum neurotoxin E derived from Clostridium botulinum type
A; Reference number: JH0256; MUID:92181428; PMID:1543481
A; Accession: JH0257
A; Status: nucleic acid sequence not shown
A; Molecule type: DNA
A; Residues: 1-176, 'R', 178-197, 'C', 199-339, 'R', 341-772, 'I', 774-962, 'FE', 965-966, 'R', 968-
A; Cross-references: EMBL:X62089; NID:g40393; PIDN:CAA43959.1; PID:g40394
A; Experimental source: strain Beluga
R; Binz, T.; Kurazono, H.; Wille, M.; Frevert, J.; Wernars, K.; Niemann, H.
J. Biol. Chem. 265, 9153-9158, 1990
A; Title: The complete sequence of botulinum neurotoxin type A and comparison with other
A; Reference number: A35294; MUID:90264400; PMID:2160960
A; Accession: B35294
A; Status: not compared with conceptual translation
A; Molecule type: DNA
A; Residues: 1-176, 'R', 178-252 <BIN>
A; Experimental source: strain Beluga
R; Gimenez, J.A.; DasGupta, B.R.
Biochimie 72, 213-217, 1990
A; Title: Botulinum neurotoxin type E fragmented with endoproteinase Lys-C reveals the s
A; Reference number: A60027; MUID:90344918; PMID:2116911
A; Accession: A60027
A; Molecule type: protein
A; Residues: 420-427 <GIM>
A; Experimental source: strain Beluga
A; Note: this fragment was generated by proteolysis with Lys-C rather than with trypsin
C; Comment: The clostridial neurotoxins are highly potent protein toxins that inhibit ne
C; Comment: The heavy chain mediates the binding of toxin to cell receptors while the li
C; Superfamily: tetanus toxin
C; Keywords: neurotoxin
F; 1-422/Product: botulinum neurotoxin type E light chain #status predicted <LCH>
F; 423-1252/Product: botulinum neurotoxin type E heavy chain #status predicted <HCH>
F; 412-426/Disulfide bonds: #status predicted

Query Match 50.0%; Score 56; DB 2; Length 1252;
Best Local Similarity 53.8%; Pred. No. 0.79;
Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVP 13
: ||: ||: ||:
DB 912 YKNFSISFWVRIP 924

RESULT 13
I40645
botulinum neurotoxin type A - Clostridium botulinum
C; Species: Clostridium botulinum
C; Date: 12-Aug-1996 #sequence_revision 12-Aug-1996 #text_change 09-Jul-2004
C; Accession: I40645
R; Willems, A.; East, A.K.; Lawson, P.A.; Collins, M.D.
Res. Microbiol. 144, 547-556, 1993
A; Title: Sequence of the gene coding for the neurotoxin of Clostridium botulinum type A
A; Reference number: I40645; MUID:94143603; PMID:8310180
A; Accession: I40645
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 1-1296 <REG>
A; Cross-references: UNIPROT:Q45894; EMBL:X73423; NID:g507070; PIDN:CAA51824.1; PID:g507
C; Superfamily: tetanus toxin
C; Keywords: neurotoxin

Query Match 50.0%; Score 56; DB 2; Length 1296;
Best Local Similarity 50.0%; Pred. No. 0.82;
Matches 7; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
: ||: ||: ||:
DB 938 YENFSTFWIKIPK 951


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RESULT 19
T33493
C;Species: Caenorhabditis elegans
C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 09-Jul-2004
C;Accession: T33493
R;Gattung, S.
submitted to the EMBL Data Library, October 1998
A;Description: The sequence of C. elegans cosmid F40H3.
A;Reference number: 221358
A;Accession: T33493
A;Molecule type: DNA
A;Residues: 1-276 <GAT>
A;Cross-references: UNIPROT:Q97ZKS; EMBL:AF098987; PIDN:AAC67432.1; GSPDB:GN00020; CESP:
A;Experimental source: strain Bristol N2; clone F40H3
C;Genetics:
A;Gene: CESP:F40H3.5
A;Map position: 2
A;Introns: 49/2; 109/3; 154/3; 227/3; 271/1

Query Match 43.8%; Score 49; DB 2; Length 276;
Best Local Similarity 42.9%; Pred. No. 2.3;
Matches 9; Conservative 3; Mismatches 9; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | : : : : |
Db 27 FRNFKFKWIDLQKGEKSHLE 47

RESULT 20
T47446
hypothetical protein T18B22.110 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 09-Jul-2004
C;Accession: T47446
R;Jordan, N.; Bangert, S.; Wiedelmann, R.; Voss, H.; Unseid, M.; Mewes, H.W.; Lemcke, K.
submitted to the Protein Sequence Database, February 2000
A;Reference number: 224467
A;Accession: T47446
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-504 <JOR>
A;Cross-references: UNIPROT:Q9M1N3; EMBL:AL138652
A;Experimental source: cultivar Columbia; BAC clone T18B22
C;Genetics:
A;Map position: 3
A;Note: T18B22.110

Query Match 42.9%; Score 48; DB 2; Length 504;
Best Local Similarity 41.7%; Pred. No. 6.3;
Matches 10; Conservative 6; Mismatches 4; Indels 4; Gaps 1;

QY 1 FNNFTV----SFWLRVPKVSASHL 20
| : : : : : |
Db 216 FFNYSLQKSNFTWLKHQKVEANHL 239

RESULT 21
S70582
botulinum neurotoxin type Daa precursor - Clostridium botulinum phase d-sa
C;Species: Clostridium botulinum type D (strain South Africa)
A;Note: host Clostridium botulinum type D (strain South Africa)
C;Date: 19-Mar-1997 #sequence_revision 19-Mar-1997 #text_change 20-Jun-2000
C;Accession: S70582
R;Morishiki, K.; Koura, M.; Abe, N.; Fujii, N.; Fujinaga, Y.; Inoue, K.; Ogumad, K.
Biochim. Biophys. Acta 1307, 123-126, 1996
A;Title: Mosaic structures of neurotoxins produced from Clostridium botulinum types C and D
A;Reference number: S70582; MUID:96283801; PMID:8679691
A;Accession: S70582
A;Status: nucleic acid sequence not shown

A;Molecule type: DNA
A;Residues: 1-1285 <MOR>
A;Cross-references: EMBL:D38442; NID:G1374775; PIDN:BAA07477.1; PID:G1374776
C;Comment: The clostridial neurotoxins are highly potent protein toxins that inhibit the
a disulfide bond. The heavy chain mediates the binding of toxin to the presynaptic mem
C;Superfamily: tetanus toxin
C;Keywords: disulfide bond; neurotoxin; transmembrane protein
F;1-447/Product: botulinum neurotoxin type Daa light chain #status predicted <MAT1>
F;448-1285/Product: botulinum neurotoxin type Daa heavy chain #status predicted <MAT2>

Query Match 42.9%; Score 48; DB 2; Length 1285;
Best Local Similarity 42.9%; Pred. No. 17;
Matches 6; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
: : : : : |
Db 931 YESFSISFWIRINK 944

RESULT 22
A49777
botulinum neurotoxin type C1 precursor - Clostridium botulinum (type C, strain c-st)
C;Species: Clostridium botulinum
C;Date: 10-Mar-1994 #sequence_revision 07-Apr-1994 #text_change 09-Jul-2004
C;Accession: S11291; A35396; S22166; A49777
R;Hauser, D.; Eklund, M.W.; Kurazono, H.; Binz, T.; Niemann, H.; Gill, D.M.; Boquet, P.
Nucleic Acids Res. 18, 4924, 1990
A;Title: Nucleotide sequence of Clostridium botulinum C1 neurotoxin.
A;Reference number: S11291; MUID:90370487; PMID:2204031
A;Accession: S11291
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-84, 'P', 86-1291 <HAU>
A;Cross-references: UNIPROT:Q93HT3; EMBL:X53751; NID:G14905; PIDN:CAA37780.1; PID:G1490
R;Kimura, K.; Fujii, N.; Tsuzuki, K.; Murakami, T.; Indoh, T.; Yokosawa, N.; Takeshi, K.
Biochem. Biophys. Res. Commun. 171, 1304-1311, 1990
A;Title: The complete nucleotide sequence of the gene coding for botulinum type C-1 tox
A;Reference number: A35396; MUID:91024998; PMID:2222445
A;Accession: A35396
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-669, 'R', 671-1291 <TS1>
R;Tsuzuki, K.; Kimura, K.; Fujii, N.; Yokosawa, N.; Oguma, K.
submitted to the EMBL Data Library, December 1991
A;Description: Nucleotide sequence of the gene for one of the components of hemagglutin
A;Reference number: S22163
A;Accession: S22166
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1291 <TS2>
A;Cross-references: EMBL:X62389; NID:G558175; PIDN:CAA44263.1; PID:G40390
R;Kimura, K.; Fujii, N.; Tsuzuki, K.; Murakami, T.; Indoh, T.; Yokosawa, N.; Oguma, K.
Appl. Environ. Microbiol. 57, 1168-1172, 1991
A;Title: Cloning of the structural gene for Clostridium botulinum type C-1 toxin and wh
A;Reference number: A49777; MUID:91282468; PMID:2059039
A;Accession: A49777
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-607 <TS3>
A;Cross-references: GB:D90210
C;Superfamily: tetanus toxin
C;Keywords: neurotoxin

Query Match 42.9%; Score 48; DB 2; Length 1291;
Best Local Similarity 42.9%; Pred. No. 17;
Matches 6; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
: : : : : |
Db 935 YESFSISFWIRINK 948

RESULT 23
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OM protein - protein search, using sw model

Run on: January 25, 2005, 06:04:08 ; Search time 69.4167 Seconds
(without alignments)
174.063 Million cell updates/sec

Title: US-09-806-703A-14

Perfect score: 112

Sequence: 1 FNNFTVSFWLRVPKVSASHLE 21

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt 02:*

1: uniprot_sprot:*

2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	112	100.0	451	2 Q9LA13	Q9LA13 clostridium
2	112	100.0	1310	2 Q93N27	Q93N27 clostridium
3	112	100.0	1314	1 TETX CLOTE	P04958 clostridium
4	62	55.4	1268	2 Q45851	Q45851 clostridium
5	61	54.5	366	2 Q79AH9	Q79AH9 clostridium
6	61	54.5	1274	1 BFX CLOBO	P30996 clostridium
7	61	54.5	1278	2 Q57236	Q57236 clostridium
8	61	54.5	1296	1 BXG CLOBO	O60393 clostridium
9	59	52.7	1295	1 BXA1 CLOBO	P10845 clostridium
10	59	52.7	1296	2 AAM75961	AAM75961 clostridi
11	59	52.7	1296	2 AAQ06331	AAQ06331 clostridi
12	58	51.8	361	2 Q45846	Q45846 clostridium
13	58	51.8	361	2 Q45848	Q45848 clostridium
14	58	51.8	441	2 Q9X708	Q9X708 clostridium
15	58	51.8	1290	1 BXB CLOBO	P10844 clostridium
16	58	51.8	1291	2 Q08077	Q08077 clostridium
17	58	51.8	1291	2 Q8GR96	Q8GR96 clostridium
18	58	51.8	1291	2 Q9ZAJ8	Q9ZAJ8 clostridium
19	58	51.8	1291	2 Q933K0	Q933K0 clostridium
20	58	51.8	1291	1 Q93G71	Q93G71 clostridium
21	57	50.9	1051	1 VP2 AHSV6	O71024 african hor
22	56	50.0	367	2 Q45861	Q45861 clostridium
23	56	50.0	367	2 Q45862	Q45862 clostridium
24	56	50.0	1250	1 BXE CLOBO	Q00496 clostridium
25	56	50.0	1250	1 BXE CLOBO	P30995 clostridium
26	56	50.0	1251	2 Q9K395	Q9K395 clostridium
27	56	50.0	1252	2 Q8K2M3	Q8K2M3 clostridium
28	56	50.0	1252	2 BAB86845	BAB86845 clostridi
29	56	50.0	1255	2 Q9FAR6	Q9FAR6 clostridium
30	56	50.0	1295	1 BXA2 CLOBO	Q45894 clostridium
31	55	49.1	1280	2 Q9ZAJ5	Q9ZAJ5 clostridium

RESULT 1

Q9LA13

ID Q9LA13 PRELIMINARY; PRT; 451 AA.

AC Q9LA13; AC Q9LA13; (Tremblrel. 15, Created)

DT 01-OCT-2000 (Tremblrel. 15, Last sequence update)

DT 01-MAR-2004 (Tremblrel. 26, Last annotation update)

DE Tetanus toxin (Fragment).

OS Clostridium tetani.

OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;

OC Clostridium.

ON NCBI_TaxID=1513;

RN [1]

RP SEQUENCE FROM N.A.

RC STRAIN=20886;

RA He H.J., Shi H.J., He Z.Y., Yuan Q.S., Wu X.F.;

RL Submitted (MAY-1999) to the EMBL/GenBank/DBJ databases.

DR EMBL; AF154828; AAF73267.1; -

DR InterPro; IPR008985; ConA like lec_gl.

DR InterPro; IPR011065; Kunitz_like.

FT NON_TER 1

SQ SEQUENCE 451 AA; 51823 MW; 69A8C5F030B6CD8E CRC64;

Query Match

Best Local Similarity 100.0%; Score 112; DB 2; Length 451;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 83 FNNFTVSFWLRVPKVSASHLE 103

RESULT 2

Q93N27

ID Q93N27 PRELIMINARY; PRT; 1310 AA.

AC Q93N27; AC Q93N27; (Tremblrel. 19, Created)

DT 01-DEC-2001 (Tremblrel. 19, Last sequence update)

DT 01-MAR-2004 (Tremblrel. 26, Last annotation update)

DE Tetanus toxin (Fragment).

OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;

OC Clostridium.

ON NCBI_TaxID=1513;

RN [1]

RP SEQUENCE FROM N.A.

RA Shumin Z., Dianliang L.;

RL Submitted (JUN-2001) to the EMBL/GenBank/DBJ databases.

DR EMBL; AF389424; AAK72964.2; -

DR GO; GO:0008233; F:peptidase activity; IEA.

DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.

DR InterPro; IPR011591; Botulinum.

DR InterPro; IPR008985; ConA like lec_gl.

DR InterPro; IPR008985; ConA like lec_gl.

Q76D18 impatiens n
Bac99990 impatiens n
Q01811 impatiens n
P26002 tomato spot
Q8JXJ9 tomato spot
Q8JXK0 tomato spot
P26003 tomato spot
Q37367 tomato spot
Q37369 tomato spot
Q8JXK2 tomato spot
Q8JXK4 tomato spot
Q88900 tospovirus.
P46081 clostridium

DR InterPro; IPR011065; Kunitz like.
 DR InterPro; IPR000395; Peptidase M27.
 DR InterPro; IPR006025; Pept_M_Zn_BS.
 DR Pfam; PF01742; Peptidase M27; 1.
 DR PRINTS; PR00760; BONTOKILYSIN.
 DR ProDom; PD001963; Botulinum; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
 FT NON_TER 1 1310 1310
 FT NON_TER 1310 1310
 SQ SEQUENCE 1310 AA; 150316 MW; 9EADDG914418E450 CRC64;
 Query Match 100.0%; Score 112; DB 2; Length 1310;
 Best Local Similarity 100.0%; Pred. No. 2.6e-09;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 948 FNNFTVSFWLRVPKVSASHLE 968
 RESULT 3
 TETX_CLOTE STANDARD; PRT; 1314 AA.
 ID TETX_CLOTE
 AC P04958;
 DT 13-AUG-1987 (Rel. 05, Created)
 DT 13-AUG-1987 (Rel. 05, Last sequence update)
 DT 01-OCT-2004 (Rel. 45, Last annotation update)
 DE Tetanus toxin precursor [EC 3.4.24.68] (tentoxylisin) [Contains:
 DE Tetanus toxin light chain (Tetanus toxin chain L); Tetanus toxin heavy
 DE chain (Tetanus toxin chain H)].
 DE Name: tetX; Ordered locus names=ctp60;
 GS Clostridium tetani.
 OG Plasmid pE88, and Plasmid 75 Kbp.
 OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
 OC Clostridium.
 OX NCBI_TaxID=1513;
 RN [1]
 RN SEQUENCE FROM N.A.
 RC PLASMID=75 Kbp;
 RX MEDLINE=87053814; PubMed=3536478;
 RA Eisel U., Jarausch W., Gorenzki K., Henschen A., Engels J., Weller U.,
 RA Hudel M., Habermann E., Nienemann H., Fricke W.F., Wierze A., Liesegang H.,
 RT "Tetanus toxin: primary structure, expression in E. coli, and homology
 RT with botulinum toxins.";
 RL EMBO J. 5:2495-2502(1986).
 RN [2]
 RN SEQUENCE FROM N.A.
 RC STRAIN=CN3911; PLASMID=75 Kbp;
 RX MEDLINE=87040747; PubMed=3774547;
 RA Fairweather N.F., Lyness V.A.;
 RT "The complete nucleotide sequence of tetanus toxin.";
 RL Nucleic Acids Res. 14:7809-7812(1986).
 RN [3]
 RN SEQUENCE FROM N.A.
 RC STRAIN=Massachusetts / E88; PLASMID=pE88;
 RX MEDLINE=22457253; PubMed=12552129; DOI=10.1073/pnas.0335853100;
 RA Bruggemann H., Baumer S., Fricke W.F., Wierze A., Liesegang H.,
 RA Decker I., Herzberg C., Martinez-Arias R., Merkl R., Henne A.,
 RA Gottschalk G.;
 RT "The genome sequence of Clostridium tetani, the causative agent of
 RT tetanus disease.";
 RL Proc. Natl. Acad. Sci. U.S.A. 100:1316-1321(2003).
 RN [4]
 RN SEQUENCE OF 742-1314 FROM N.A.
 RC PLASMID=75 Kbp;
 RX MEDLINE=86085672; PubMed=3510187;
 RA Fairweather N.F., Lyness V.A., Pickard D.J., Allen G., Thomson R.O.;
 RT "Cloning, nucleotide sequencing, and expression of tetanus toxin
 RT fragment C in Escherichia coli.";
 RL J. Bacteriol. 165:21-27(1986).
 RN [5]
 RN PARTIAL SEQUENCE, AND DISULFIDE BONDS.
 RP MEDLINE=90201034; PubMed=2108021;

RA Krieglstein K., Henschen A., Weller U., Habermann E.;
 RT "Arrangement of disulfide bridges and positions of sulfhydryl groups
 RT in tetanus toxin.";
 RL Eur. J. Biochem. 188:39-45(1990).
 RN [6]
 RN PARTIAL SEQUENCE.
 RX MEDLINE=92037649; PubMed=1935979;
 RA Krieglstein K.G., Henschen A.H., Weller U., Habermann E.;
 RT "Limited proteolysis of tetanus toxin. Relation to activity and
 RT identification of cleavage sites.";
 RL Eur. J. Biochem. 202:41-51(1991).
 RN [7]
 RN IDENTIFICATION AS ZINC-PROTEASE.
 RX MEDLINE=93010948; PubMed=1396558;
 RA Schiavo G., Poullain B., Rossetto O., Benfenati F., Tauc L.,
 RA Montecucco C.;
 RT "Tetanus toxin is a zinc protein and its inhibition of
 RT neurotransmitter release and protease activity depend on zinc.";
 RL EMBO J. 11:3577-3583(1992).
 RN [8]
 RN IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=93063293; PubMed=1331807;
 RA Schiavo G., Benfenati F., Poullain B., Rossetto O., de Laureto P.P.,
 RA Dasgupta B.R., Montecucco C.;
 RT "Tetanus and botulinum-B neurotoxins block neurotransmitter release by
 RT proteolytic cleavage of synaptobrevin.";
 RL Nature 359:832-835(1992).
 RN [9]
 RN X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS) OF 874-1314.
 RX MEDLINE=97475217; PubMed=9334741;
 RA Umland T.C., Wingert L.M., Swaminathan S., Furey W.F., Schmidt J.J.,
 RA Sax M.;
 RT "Structure of the receptor binding fragment HC of tetanus
 RT neurotoxin.";
 RL Nat. Struct. Biol. 4:788-792(1997).
 CC -!- FUNCTION: Tetanus toxin acts by inhibiting neurotransmitter
 CC release. It binds to peripheral neuronal synapses, is internalized
 CC and moves by retrograde transport up the axon into the spinal cord
 CC where it can move between postsynaptic and presynaptic neurons. It
 CC inhibits neurotransmitter release by acting as a zinc
 CC endopeptidase that catalyzes the hydrolysis of the 76-Gln-Phe-77
 CC bond of synaptobrevin-2.
 CC -!- CATALYTIC ACTIVITY: Hydrolysis of 76-Gln-Phe-77 bond in
 CC synaptobrevin 2.
 CC -!- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -!- SUBUNIT: The precursor polypeptide is subsequently cleaved to
 CC yield subchains I and H. These remain linked by a disulfide bridge
 CC and are non-toxic after separation.
 CC -!- MISCELLANEOUS: The C-terminus of the heavy chain binds to
 CC ganglioside receptors.
 CC -!- SIMILARITY: Belongs to peptidase family M27.
 CC -----
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 CC -----
 CC EMBL; X04436; CAA28033.1; -;
 DR EMBL; X06214; CAA29564.1; -;
 DR EMBL; AF528097; AA037454.1; -;
 DR EMBL; M12739; AA23282.1; -;
 DR PIR; A25689; BTCLTN.
 DR PDB; 1A8D; X-ray; @=863-1314.
 DR PDB; 1AF9; X-ray; @=863-1314.
 DR PDB; 1D0H; X-ray; A=846-1314.
 DR PDB; 1DFQ; X-ray; A=871-1314.
 DR PDB; 1DIW; X-ray; A=874-1314.
 DR PDB; 1DLL; X-ray; A=874-1314.
 DR PDB; 1FV2; X-ray; A=843-1314.
 DR PDB; 1FV3; X-ray; A/B=843-1314.

DR MEROPS; M27.001; --
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept_M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTOTOXILYSIN.
DR PRODOM; PD001963; Bontoxilysin; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; 1.
KW 3D-structure; Complete proteome; Direct protein sequencing; Hydrolase;
KW Metalloprotease; Neurotoxin; Plasmid; Transmembrane; Zinc.
FT INIT_MET 0
FT CHAIN 1 456 Tetanus toxin light chain.
FT CHAIN 457 1314 Tetanus toxin heavy chain.
FT METAL 232 232 Zinc (catalytic) (By similarity).
FT ACT_SITE 233 233 By similarity.
FT METAL 236 236 Zinc (catalytic) (By similarity).
FT TRANSMEM 226 246 Potential.
FT TRANSMEM 669 689 Potential.
FT DISULFID 438 466 Interchain.
FT DISULFID 1076 1092
FT HELIX 876 882
FT TURN 883 883
FT STRAND 884 891
FT TURN 892 893
FT STRAND 894 897
FT STRAND 904 907
FT TURN 909 910
FT STRAND 912 915
FT STRAND 920 925
FT TURN 928 929
FT STRAND 932 935
FT STRAND 938 940
FT HELIX 941 946
FT TURN 949 956
FT HELIX 962 968
FT TURN 969 970
FT STRAND 972 977
FT STRAND 980 981
FT HELIX 983 985
FT STRAND 987 995
FT TURN 996 997
FT STRAND 998 1004
FT TURN 1006 1007
FT STRAND 1010 1016
FT STRAND 1020 1020
FT TURN 1021 1022
FT STRAND 1031 1037
FT TURN 1039 1040
FT STRAND 1042 1047
FT TURN 1048 1049
FT STRAND 1050 1056
FT TURN 1058 1059
FT STRAND 1068 1074
FT TURN 1079 1080
FT STRAND 1082 1091
FT HELIX 1097 1105
FT TURN 1106 1107
FT STRAND 1112 1112
FT STRAND 1114 1114
FT TURN 1116 1117
FT STRAND 1120 1120
FT STRAND 1122 1122
FT TURN 1123 1124
FT STRAND 1127 1131
FT HELIX 1132 1134
FT TURN 1135 1136
FT STRAND 1137 1141
FT TURN 1144 1145
FT STRAND 1148 1152
FT STRAND 1155 1158
FT TURN 1159 1162
FT STRAND 1163 1166

FT STRAND 1173 1178
FT TURN 1184 1185
FT STRAND 1188 1188
Query Match 100.0%; Score 112; DB 1; Length 1314;
Best Local Similarity 100.0%; Pred. No. 2.6e-09;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 946 FNNFTVSFWLRVPKVSASHLE 966
RESULT 4
Q45851 PRELIMINARY; PRT; 1268 AA.
AC Q45851
DT 01-NOV-1996 (TrEMBLrel. 01, Created)
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Neurotoxin type F.
GN Name=bont /F;
OS Clostridium baratii.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1561;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=93252228; PubMed=8486245;
RA Thompson D.E., Hutson R.A., East A.K., Allaway D., Collins M.D.,
RA "Nucleotide sequence of the gene coding for Clostridium baratii type F
RT neurotoxin; comparison with other clostridial neurotoxins."
RL FEMS Microbiol. Lett. 108:175-182 (1993).
DR EMBL; X68262; CAA48329.1; --
DR PIR; S33411; S33411.
DR HSSP; Q45894; 1E1H.
DR MEROPS; M27.002; --
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:pathogenesis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept_M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTOTOXILYSIN.
DR PRODOM; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1268 AA; 145512 MW; 963040091AC15ED2 CRC64;
Query Match 55.4%; Score 62; DB 2; Length 1268;
Best Local Similarity 64.3%; Pred. No. 0.48;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;
QY 1 FNNFTVSFWLRVPK 14
Db 922 YQNFSVFWVRIPK 935
RESULT 5
Q79AH9 PRELIMINARY; PRT; 366 AA.
AC Q79AH9
DT 05-JUL-2004 (TrEMBLrel. 27, Created)
DT 05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Botulinum neurotoxin type F (fragment).
GN Name=BoNT/F;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;

```

CC Clostridium.
OX NCBI_TaxID=1491;
EN [1]
RP SEQUENCE FROM N.A.
RX STRAIN-type F;
RC MEDLINE=94013372; PubMed=8408542;
RA Campbell K., East A.K., Collins M.D.;
RT "Gene probes for identification of the botulinum neurotoxin gene and
RT specific identification of neurotoxin types B, E, and F.";
RL J. Clin. Microbiol. 31:2255-2262(1993).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN-type F;
RA Campbell K.D.;
RL Submitted (JAN-1993) to the EMBL/GenBank/DBJ databases.
DR EMBL; X70821; CA50152.1; -
DR GO; GO:0009405; P:pathogenesis; IEA.
DR InterPro; IPR008985; ConA_like_1ec_g1.
KW Neurotoxin.
FT NON TER 1
FT NON TER 366
FT NON TER 366
SQ SEQUENCE 366 AA; 43136 MW; 45A132B235D7E640 CRC64;

Query Match 54.5%; Score 61; DB 2; Length 366;
Best Local Similarity 57.1%; Pred. No. 0.19;
Matches 8; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
Db 297 YQNFSISFWVRIPK 310
: |||:|||||:|

RESULT 6
BXE_CLOBO STANDARD; PRT; 1274 AA.
AC P30996;
DT 01-JUL-1993 (Rel. 26, Created)
DT 01-JUL-1993 (Rel. 26, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Botulinum neurotoxin type F precursor (EC 3.4.24.69) (BoNT/F)
DE (Bontoxilsin F).
GN NamesBotF;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-type F / ATCC 23387;
RX MEDLINE=93012902; PubMed=1398040;
RA East A.K., Richardson P.T., Allaway D., Collins M.D., Roberts T.A.,
RA Thompson D.E.;
RT "Sequence of the gene encoding type F neurotoxin of Clostridium
RT botulinum.";
RL FEMS Microbiol. Lett. 75:225-230(1992).
RN [2]
RP SEQUENCE OF 1-64 FROM N.A.
RC STRAIN-type F / Hobbs FT10;
RX MEDLINE=94297488; PubMed=7764998;
RA East A.K., Collins M.D.;
RT "Conserved structure of genes encoding components of botulinum
RT neurotoxin complex M and the sequence of the gene coding for the
RT nontoxic component in nonproteolytic Clostridium botulinum type F.";
RL Curr. Microbiol. 29:69-77(1994).
RN [3]
RP SEQUENCE OF 634-1002 FROM N.A.
RX MEDLINE=94013372; PubMed=8408542;
RA Campbell K., East A.K., Collins M.D.;
RT "Gene probes for identification of the botulinum neurotoxin gene and
RT specific identification of neurotoxin types B, E, and F.";
RL J. Clin. Microbiol. 31:2255-2262(1993).
RN [4]
RP IDENTIFICATION OF SUBSTRATE.

RX MEDLINE=94230352; PubMed=8175689;
RA Yamasaki S., Baumeister A., Binz T., Blasi J., Link E., Cornille F.,
RA Roques B., Fykse E.M., Suedhof T.C., Jahn R., Niemann H.;
RT "Cleavage of members of the synaptobrevin/VAMP family by types D and F
RT botulinum neurotoxins and tetanus toxin.";
RL J. Biol. Chem. 269:12764-12772(1994).
CC -!- FUNCTION: Botulinum toxin acts by inhibiting neurotransmitter
CC release. It binds to peripheral neuronal synapses, is internalized
CC and moves by retrograde transport up the axon into the spinal cord
CC where it can move between postsynaptic and presynaptic neurons. It
CC inhibits neurotransmitter release by acting as a zinc
CC endopeptidase that catalyzes the hydrolysis of the 58-Gln--Lys-59
CC bond of synaptobrevins-1 and -2.
CC -!- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
CC neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
CC detected action on small molecule substrates.
CC -!- COFACTOR: Binds 1 zinc ion per subunit (By similarity). (L) and a
CC -!- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
CC heavy chain (H). The light chain has the pharmacological activity,
CC while the N- and C-terminal of the heavy chain mediate channel
CC formation and toxin binding, respectively.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- MISCELLANEOUS: There are seven antigenically distinct forms of
CC botulinum neurotoxin: Types A, B, C, D, E, F, and G.
CC -!- SIMILARITY: Belongs to peptidase family M27.

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DR EMBL; M92906; AAA23263.1; -
DR EMBL; S73676; AAC60475.1; -
DR EMBL; X70820; CA50151.1; -
DR EMBL; X70816; CA50147.1; -
DR PIR; I40813; I40813.
DR PIR; S48109; S48109.
DR HSP; Q45894; IEIH.
DR MEROPS; M27.002; -.
DR InterPro; IPR008985; ConA_like_1ec_g1.
DR InterPro; IPR011065; Kunitz_like.
DR InterPro; IPR003955; Peptidase_M27.
DR InterPro; IPR006025; Pept_M_Zn_BS.
DR Pfam; PF01742; Peptidase_M27; 1.
DR PRINTS; PR00760; BONTOXILYSIN.
DR ProDom; PD001963; Bontoxilsin; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; 1.
KW Hydrolase; Metalloprotease; Neurotoxin; Transmembrane; Zinc.
FT CHAIN 1 436
FT CHAIN 437 1274
FT METAL 227 227
FT ACT_SITE 228 228
FT METAL 231 231
FT DISULFID 429 445
SQ SEQUENCE 1274 AA; 146709 MW; 5B99756A7438B921 CRC64;

Query Match 54.5%; Score 61; DB 1; Length 1274;
Best Local Similarity 57.1%; Pred. No. 0.7;
Matches 8; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
Db 930 YQNFSISFWVRIPK 943
: |||:|||||:|

RESULT 7
Q57236 PRELIMINARY; PRT; 1278 AA.
ID Q57236 AC Q57236; Q45863;
AC Q57236; Q45863;
DT 01-NOV-1996 (TrEMBLrel. 01, Created)

```


RA Atkinson T., Melling J., Minton N.P.;
RT "The complete amino acid sequence of the Clostridium botulinum type A
RT neurotoxin, deduced by nucleotide sequence analysis of the encoding
RT gene.";
RL Eur. J. Biochem. 189:73-81(1990).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=Type A / 62A;
RX MEDLINE=50264400; PubMed=2160960;
RA Binz B., Kuarazono H., Wille M., Frevent J., Wernars K., Niemann H.;
RT "The complete sequence of botulinum neurotoxin type A and comparison
RT with other clostridial neurotoxins.";
RL J. Biol. Chem. 265:9153-9158(1990).
RN [3]
RP SEQUENCE OF 1-65 FROM N.A.
RC STRAIN=Type A / 62A;
RX MEDLINE=97016817; PubMed=8863443;
RA East A.K., Bhandari M., Stacey J.M., Campbell K.D., Collins M.D.;
RT "Organization and phylogenetic interrelationships of genes encoding
RT components of the botulinum toxin complex in proteolytic Clostridium
RT botulinum types A, B, and F: evidence of chimeric sequences in the
RT gene encoding the nontoxic nonhemagglutinin component.";
RL Int. J. Syst. Bacteriol. 46:1105-1112(1996).
RN [4]
RP SEQUENCE OF 1-34 FROM N.A.
RC STRAIN=Type A / Hall;
RX MEDLINE=89350959; PubMed=2669749;
RA Batley M.J., Somers E., Dasgupta B.R.;
RT "Characterization of botulinum type A neurotoxin gene: delineation of
RT the N-terminal encoding region.";
RL Biochem. Biophys. Res. Commun. 162:1388-1395(1989).
RN [5]
RP SEQUENCE OF 1-18 FROM N.A.
RC STRAIN=Type A / NTH;
RX MEDLINE=96056783; PubMed=8521962;
RA Fujita R., Fujinaga Y., Inoue K., Nakajima H., Kumon H., Oguma K.;
RT "Molecular characterization of two forms of nontoxic-nonhemagglutinin
RT components of Clostridium botulinum type A progenitor toxins.";
RL FEBS Lett. 376:41-44(1995).
RN [6]
RP SEQUENCE OF 1-16.
RX MEDLINE=84178501; PubMed=6370252;
RA Schmitt J.J., Sarthyoorthy V., Dasgupta B.R.;
RT "Partial amino acid sequence of the heavy and light chains of
RT botulinum neurotoxin type A.";
RL Biochem. Biophys. Res. Commun. 119:900-904(1984).
RN [7]
RP SEQUENCE OF 1-46.
RA Dasgupta B.R., Foley J., Niece R.;
RT "Partial sequence of the light chain of botulinum neurotoxin type A.";
RL Biochemistry 26:4162-4162(1987).
RN [8]
RP SEQUENCE OF 1-5 AND 444-456.
RX MEDLINE=91120847; PubMed=2126206;
RA Dasgupta B.R., Dekleva M.L.;
RT "Botulinum neurotoxin type A: sequence of amino acids at the N-
RT terminus and around the nicking site.";
RL Biochimie 72:661-664(1990).
RN [9]
RP SEQUENCE OF 448-464 AND 872-895.
RX MEDLINE=89024662; PubMed=3178218;
RA Sathymoorthy V., Dasgupta B.R., Foley J., Niece R.L.;
RT "Botulinum neurotoxin type A: cleavage of the heavy chain into two
RT halves and their partial sequences.";
RL Arch. Biochem. Biophys. 266:142-151(1988).
RN [10]
RP SEQUENCE OF 448-482.
RX MEDLINE=85285016; PubMed=3896784;
RA Shone C.C., Hambleton P., Melling J.;
RT "Inactivation of Clostridium botulinum type A neurotoxin by trypsin
RT and purification of two tryptic fragments. Proteolytic action near the
RT COOH-terminus of the heavy subunit destroys toxin-binding activity.";
RL Eur. J. Biochem. 151:75-82(1985).

RN [11]
RP SEQUENCE OF 866-879 AND 1147-1218.
RX Gimenez J.A., Dasgupta B.R.;
RT "Botulinum type A neurotoxin digested with pepsin yields 132, 97, 72,
RT 45, 42, and 18 kD fragments.";
RL J. Protein Chem. 12:351-363(1993).
RN [12]
RP IDENTIFICATION OF SUBSTRATE.
RX MEDLINE=94063091; PubMed=8243676;
RA Schiavo G., Santucci A., Dasgupta B.R., Mehta P.P., Jontes J.,
RA Bentenati F., Wilson M.C., Montecucco C.;
RT "Botulinum neurotoxins serotypes A and E cleave SNAP-25 at distinct
RT COOH-terminal peptide bonds.";
RL FEBS Lett. 335:99-103(1993).
RN [13]
RP IDENTIFICATION OF SUBSTRATE.
RX MEDLINE=94124495; PubMed=8294407;
RA Binz T., Biasi J., Yamasaki S., Baumeister A., Link E., Suedhof T.C.,
RA Jahn R., Niemann H.;
RT "Proteolysis of SNAP-25 by types E and A botulin neurotoxins.";
RL J. Biol. Chem. 269:1617-1620(1994).
RN [14]
RP MUTAGENESIS OF GLU-261; PHE-265 AND TYR-365.
RX MEDLINE=21556941; PubMed=11700044; DOI=10.1006/bbrc.2001.5911;
RA Righi M., Caccin P., Johnson E.A., Montecucco C., Rossetto O.;
RT "Site-directed mutagenesis identifies active-site residues of the
RT light chain of botulinum neurotoxin type A.";
RL Biochem. Biophys. Res. Commun. 288:1231-1237(2001).
RN [15]
RP X-RAY CRYSTALLOGRAPHY (3.3 ANGSTROMS).
RX MEDLINE=98455071; PubMed=9783750;
RA Lacy D.B., Tepp W., Cohen A.C., Dasgupta B.R., Stevens R.C.;
RT "Crystal structure of botulinum neurotoxin type A and implications for
RT toxicity.";
RL Nat. Struct. Biol. 5:898-902(1998).
CC -!- FUNCTION: Inhibits acetylcholine release. The botulinum toxin
CC binds with high affinity to peripheral neuronal presynaptic
CC membrane, is then internalized by receptor-mediated endocytosis.
CC The C-terminus of the heavy chain (H) is responsible for the
CC adherence of the toxin to the cell surface while the N-terminus
CC mediates transport of the light chain from the endocytic vesicle
CC to the cytosol. After translocation, the light chain (L)
CC hydrolyzes the 197-Gln-|-Arg-198 bond in SNAP-25, thereby blocking
CC neurotransmitter release. Inhibition of acetylcholine release
CC results in flaccid paralysis, with frequent heart or respiratory
CC failure.
CC -!- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
CC neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
CC detected action on small molecule substrates.
CC -!- COFACTOR: Binds 1 zinc ion per subunit.
CC -!- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
CC heavy chain (H).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- PHARMACEUTICAL: Available under the name BOTOX (Allergan) for the
CC treatment of strabismus and blepharospasm associated with dystonia
CC and cervical dystonia. Also used for the treatment of hemifacial
CC spasm and a number of other neurological disorders characterized
CC by abnormal muscle contraction.
CC -!- MISCELLANEOUS: There are seven antigenically distinct forms of
CC botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
CC -!- SIMILARITY: Belongs to peptidase family M27.
CC -!- DATABASE: NAME=BOTOX product information Web site;
CC WWW="http://www.botox.com/site/".
CC -!- DATABASE: NAME=Protein Spotlight; NOTE=Issue 19 of February 2002;
CC WWW="http://www.expasy.org/spotlight/articles/spt1019.html".
CC -----
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CC entities requires a license agreement (see <http://www.isb-ebi.ch/announce/>)

RX MEDLINE=93054694; PubMed=1429690;

RX MEDLINE=93054694; PubMed=1429690;

RA Schiavo G., Rossetto O., Santucci A., Dasgupta B.R., Montecucco C.;
 RT "Botulinum neurotoxins are zinc proteases";
 RL J. Biol. Chem. 267:23479-23483(1992).
 RN [7]
 RP IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=93063293; PubMed=1331807;
 RA Schiavo G., Benfenati F., Poulain B., Rossetto O., de Laureto P.P.,
 RA Dasgupta B.R., Montecucco C.;
 RT "Tetanus and botulinum-B neurotoxins block neurotransmitter release by
 RT proteolytic cleavage of synaptobrevin";
 RL Nature 359:832-835(1992).
 CC -1- FUNCTION: Botulinum toxin acts by inhibiting neurotransmitter
 CC release. It binds to peripheral neuronal synapses, is internalized
 CC and moves by retrograde transport up the axon into the spinal cord
 CC where it can move between postsynaptic and presynaptic neurons. It
 CC inhibits neurotransmitter release by acting as a zinc
 CC endopeptidase that cleaves the 76-Gln-Phe-77 bond of
 CC synaptobrevin-2.
 CC -1- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
 CC neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
 CC detected action on small molecule substrates.
 CC -1- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -1- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
 CC heavy chain (H). The light chain has the pharmacological activity,
 CC while the N- and C-terminal of the heavy chain mediate channel
 CC formation and toxin binding, respectively.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: There are seven antigenically distinct forms of
 CC botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
 CC -1- SIMILARITY: Belongs to peptidase family M27.
 CC -----
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 DR EMBL; M81186; AAA23211.1; -;
 DR EMBL; Z11934; CAA77991.1; -;
 DR EMBL; X70817; CAA50148.1; -;
 DR PIR; A48940; A48940.
 DR PDB; 1EPW; X-ray; A=1-1290.
 DR PDB; 1F31; X-ray; A=1-1290.
 DR PDB; 1F82; X-ray; A=1-424.
 DR PDB; 1F83; X-ray; A=1-425.
 DR PDB; 1FQ8; X-ray; A=1-424.
 DR PDB; 1G9A; X-ray; A=1-1290.
 DR PDB; 1G9B; X-ray; A=1-1290.
 DR PDB; 1G9C; X-ray; A=1-1290.
 DR PDB; 1G9D; X-ray; A=1-1290.
 DR PDB; 111E; X-ray; A=1-1290.
 DR MEROPS; M27.002; -;
 DR InterPro; IPR008985; ConA like lec_g1.
 DR InterPro; IPR011065; Kunitz like.
 DR InterPro; IPR000395; peptidase M27.
 DR InterPro; IPR006025; Pept_M_Zn_BS.
 DR Pfam; PF01742; Peptidase_M27; 1.
 DR PRINTS; PR00760; BONTOKILYSIN.
 DR ProDom; PD001963; Bontoxilysin; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; 1.
 DR 3D-structure; Direct protein sequencing; Hydrolase; Metalloprotease;
 KW Neurotoxin; Transmembrane; Zinc.
 FT INIT_MET 0
 FT CHAIN 1 440 Botulinum neurotoxin B light-chain.
 FT CHAIN 441 1290 Botulinum neurotoxin B heavy-chain.
 FT METAL 229 229 Zinc (catalytic) (By similarity).
 FT ACT_SITE 230 230 By similarity.
 FT METAL 233 233 Zinc (catalytic) (By similarity).
 FT DISULFID 436 445 Interchain (Probable).
 FT CONFLICT 29 29 T -> M (in Ref. 4).
 FT CONFLICT 217 217 R -> G (in Ref. 2).
 FT FT

FT CONFLICT 224 224
 FT TURN 463 463
 FT STRAND 9 10
 FT HELIX 18 22
 FT TURN 24 26
 FT STRAND 27 28
 FT STRAND 33 33
 FT TURN 40 41
 FT STRAND 42 45
 FT TURN 51 52
 FT HELIX 55 58
 FT STRAND 63 64
 FT TURN 67 68
 FT STRAND 71 73
 FT TURN 75 78
 FT HELIX 81 98
 FT TURN 99 100
 FT HELIX 102 113
 FT TURN 121 122
 FT TURN 125 126
 FT STRAND 127 128
 FT TURN 133 135
 FT STRAND 136 140
 FT TURN 144 145
 FT STRAND 150 154
 FT STRAND 157 160
 FT STRAND 165 165
 FT TURN 166 167
 FT STRAND 170 172
 FT STRAND 175 176
 FT TURN 177 178
 FT STRAND 179 180
 FT HELIX 181 183
 FT TURN 184 185
 FT STRAND 190 193
 FT STRAND 198 202
 FT TURN 205 206
 FT TURN 210 211
 FT STRAND 219 220
 FT HELIX 223 238
 FT TURN 239 240
 FT STRAND 248 248
 FT STRAND 250 250
 FT TURN 255 256
 FT STRAND 257 257
 FT STRAND 263 263
 FT HELIX 265 271
 FT TURN 273 274
 FT HELIX 275 278
 FT STRAND 281 304
 FT STRAND 307 308
 FT TURN 312 313
 FT HELIX 316 326
 FT TURN 327 328
 FT STRAND 330 331
 FT TURN 333 334
 FT STRAND 337 338
 FT HELIX 341 353
 FT TURN 354 354
 FT STRAND 357 364
 FT TURN 365 365
 FT STRAND 377 382
 FT TURN 385 386
 FT TURN 388 390
 FT STRAND 392 392
 FT TURN 393 395
 FT STRAND 396 396
 FT TURN 397 397
 FT HELIX 400 402
 FT TURN 403 403
 FT HELIX 406 411
 FT STRAND 412 412
 FT TURN 413 415

A -> S (in Ref. 2).
 S -> R (in Ref. 4).

FT HELIX 417 419

Query Match 51.8%; Score 58; DB 1; Length 1290;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
DB 922 FLDFSFSFWIRPK 935

RESULT 16

Q08077 ID Q08077 PRELIMINARY; PRT; 1291 AA.
AC Q08077
DT 01-NOV-1996 (TREMELrel. 01, Created)
DT 01-NOV-1996 (TREMELrel. 01, Last sequence update)
DT 01-MAR-2004 (TREMELrel. 26, Last annotation update)
DE BONT/B.
GN Name=bont/b;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCB1_TaxID=1491;
RN [1]

RP SEQUENCE FROM N.A.
RC STRAIN=Exlund 17B ATCC25765;
RX MEDLINE=9412659; PubMed=7764370;
RA Hutson R.A., Collins M.D., East A.K., Thompson D.E.;
RT "Nucleotide sequence of the gene coding for non-proteolytic
RT Clostridium botulinum type B neurotoxin: comparison with other
RT clostridial neurotoxins";
RL Curr. Microbiol. 28:101-110(1994).

DR EMBL; X71343; CAA50482.1; -.
DR PIR; I40631; I40631.
DR HSP; P10844; 1F31.
DR MEROPS; M27.002; -.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:proteolysis and peptidolysis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR PRODOM; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
SQ SEQUENCE 1291 AA; 150513 MW; 71BCAFE23D69FAAA CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
DB 923 FLDFSFSFWIRPK 936

RESULT 17

Q08GR96 ID Q08GR96 PRELIMINARY; PRT; 1291 AA.
AC Q08GR96
DT 01-MAR-2003 (TREMELrel. 23, Created)
DT 01-MAR-2003 (TREMELrel. 23, Last sequence update)
DT 01-MAR-2004 (TREMELrel. 26, Last annotation update)
DE Neurotoxin.
GN Name=bontb;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCB1_TaxID=1491;

RN [1]

RP SEQUENCE FROM N.A.
RP Ihara H., Kohda T., Morimoto F., Teukamoto K., Karasawa T.,
RA Nakamura S., Mukamoto M., Kozaki S.;
RL Submitted (APR-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB084152; BAC22064.1; -.
DR HSSP; P10844; 1EPW.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:proteolysis and peptidolysis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR PRODOM; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150574 MW; 0227CAEF4F58504D CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPK 14
DB 923 FLDFSFSFWIRPK 936

RESULT 18

Q9ZAJ8 ID Q9ZAJ8 PRELIMINARY; PRT; 1291 AA.
AC Q9ZAJ8
DT 01-MAY-1999 (TREMELrel. 10, Created)
DT 01-MAY-1999 (TREMELrel. 10, Last sequence update)
DT 01-MAR-2004 (TREMELrel. 26, Last annotation update)
DE Bont protein.
GN Name=bont;
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCB1_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RX MEDLINE=98440323; PubMed=9767710;
RA Santos-Buelga J., Collins M.D., East A.K.;
RT "Characterization of the genes encoding the Botulinum neurotoxin
RT complex in a strain of clostridium botulinum producing type B & F
RT neurotoxins";
RL Curr. Microbiol. 37:312-318(1998).
RN [2]
RP SEQUENCE FROM N.A.
RC STRAIN=CDC 3281;
RA Santos-Buelga J.A.;
RL Submitted (JUN-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; Y13630; CAA73968.1; -.
DR HSSP; P10844; 1F31.
DR GO; GO:0008233; F:peptidase activity; IEA.
DR GO; GO:0009405; P:proteolysis and peptidolysis; IEA.
DR GO; GO:0006508; P:proteolysis and peptidolysis; IEA.
DR InterPro; IPR011591; Botulinum.
DR InterPro; IPR008985; ConA like lec_gl.
DR InterPro; IPR011065; Kunitz like.
DR InterPro; IPR000395; Peptidase M27.
DR InterPro; IPR006025; Pept M_Zn_BS.
DR Pfam; PF01742; Peptidase M27; 1.
DR PRINTS; PR00760; BONTXILYSIN.
DR PRODOM; PD001963; Botulinum; 1.
DR PROSITE; PS00142; ZINC_PROTEASE; UNKNOWN 1.
SQ SEQUENCE 1291 AA; 150839 MW; E4D3B0E46AB2E735 CRC64;

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DR GO: 0006508; P: proteolysis and peptidolysis; IEA.
DR InterPro: IPR011591; Botulinum.
DR InterPro: IPR008985; ConA like lec_gl.
DR InterPro: IPR011085; Kunitz like.
DR InterPro: IPR000395; Peptidase_M27.
DR InterPro: IPR006035; Peptidase_M27.
DR Pfam: PF01742; Peptidase_M27; 1.
DR PRINTS: PR00760; BONTOKILYSIN.
DR PRODOM: PD001963; Botulinum; 1.
DR PROSITE: PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150824 MW; D7CA07BAE2EB8CD2 CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
DB 923 FLDFSVFWIRIPK 936
| : : : : : : : |
| : : : : : : : |

RESULT 19
QY33K0 PRELIMINARY; PRT; 1291 AA.
ID Q933K0
AC Q933K0;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE Type B cryptic neurotoxin.
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RA Kirma N., Ferreira J.L., Baumstark B.R.;
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF300466; AAL11499.1; -.
DR EMBL: AF300465; AAL11498.1; -.
DR HSSP: P10844; If31.
DR GO: 0008233; F: peptidase activity; IEA.
DR GO: 0009405; P: pathogenesis; IEA.
DR GO: 0006508; P: proteolysis and peptidolysis; IEA.
DR InterPro: IPR011591; Botulinum.
DR InterPro: IPR008985; ConA like lec_gl.
DR InterPro: IPR011085; Kunitz like.
DR InterPro: IPR000395; Peptidase_M27.
DR InterPro: IPR006035; Peptidase_M27.
DR Pfam: PF01742; Peptidase_M27; 1.
DR PRINTS: PR00760; BONTOKILYSIN.
DR PRODOM: PD001963; Botulinum; 1.
DR PROSITE: PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150842 MW; 7AC1737B0FA5A151 CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
DB 923 FLDFSVFWIRIPK 936
| : : : : : : : |
| : : : : : : : |

RESULT 20
QY3G71 PRELIMINARY; PRT; 1291 AA.
ID Q93G71
AC Q93G71;
DT 01-DEC-2001 (TrEMBLrel. 19, Created)
DT 01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Neurotoxin type B.
OS Clostridium botulinum.
OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
OC Clostridium.
OX NCBI_TaxID=1491;
RN [1]
RP SEQUENCE FROM N.A.
RA Kirma N., Ferreira J.L., Baumstark B.R.;
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF295926; AAK97132.1; -.
DR HSSP: P10844; If31.
DR GO: 0008233; F: peptidase activity; IEA.
DR GO: 0009405; P: pathogenesis; IEA.
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DR GO: 0006508; P: proteolysis and peptidolysis; IEA.
DR InterPro: IPR011591; Botulinum.
DR InterPro: IPR008985; ConA like lec_gl.
DR InterPro: IPR011085; Kunitz like.
DR InterPro: IPR000395; Peptidase_M27.
DR InterPro: IPR006035; Peptidase_M27.
DR Pfam: PF01742; Peptidase_M27; 1.
DR PRINTS: PR00760; BONTOKILYSIN.
DR PRODOM: PD001963; Botulinum; 1.
DR PROSITE: PS00142; ZINC_PROTEASE; UNKNOWN_1.
KW Neurotoxin.
SQ SEQUENCE 1291 AA; 150824 MW; D7CA07BAE2EB8CD2 CRC64;

Query Match 51.8%; Score 58; DB 2; Length 1291;
Best Local Similarity 64.3%; Pred. No. 2.2;
Matches 9; Conservative 4; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVK 14
DB 923 FLDFSVFWIRIPK 936
| : : : : : : : |
| : : : : : : : |

RESULT 21
VP2_AHSV6 STANDARD; PRT; 1051 AA.
ID VP2_AHSV6
AC 071024;
DT 15-DEC-1998 (Rel. 37, Created)
DT 15-DEC-1998 (Rel. 37, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Outer capsid protein VP2.
GN Name=S2; Synonyms=L2;
OS African horse sickness virus 6 (AHSV-6) (African horse sickness virus
OS (serotype 6)).
OC Viruses; dsRNA viruses; Reoviridae; Orbivirus.
OX NCBI_TaxID=86060;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=98278331; PubMed=9617769;
RA Williams C.F., Inoue T., Lucas A.-M., Zanotto P., Roy P.;
RT "The complete sequence of four major structural proteins of African
RT horse sickness virus serotype 6: evolutionary relationships within and
RT between the orbiviruses."
RL Virus Res. 53:53-73(1998).
CC -!- FUNCTION: The VP2 protein is one of the two proteins (with VP5)
CC which constitute the virus particle outer capsid. It is the major
CC target of the host immunogenic response.
CC -!- SIMILARITY: Belongs to the reoviruses VP2 protein family.
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CC or send an email to license@isb-sib.ch).
CC -----
CC EMBL: AF021235; AAC40994.1; -.
CC InterPro: IPR001742; Orbi_VP2.
CC Pfam: PF00898; Orbi_VP2; 1.
CC Coat protein.
SQ SEQUENCE 1051 AA; 122326 MW; 2B04DB9E389F4B5F CRC64;

Query Match 50.9%; Score 57; DB 1; Length 1051;
Best Local Similarity 47.6%; Pred. No. 2.6;
Matches 10; Conservative 4; Mismatches 7; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVVKVSASHLE 21
DB 636 FSKRFVSFWYRVEKITTKHLE 656
| : : : : : : : |
| : : : : : : : |

RESULT 22
Q45861
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Q45861	PRELIMINARY;	PRT;	367 AA.
Q45861;			
Q45861	01-NOV-1996 (TrEMBLrel. 01, Created)		
DT	01-NOV-1996 (TrEMBLrel. 01, Last sequence update)		
DT	01-OCT-2003 (TrEMBLrel. 25, Last annotation update)		
DE	Botulinum neurotoxin type E (Fragment).		
GN	Name=BoNT/E;		
OS	Clostridium botulinum.		
OC	Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;		
OC	Clostridium.		
OX	NCBI_TaxID=1491;		
RN	[1]		
RP	SEQUENCE FROM N.A.		
RC	STRAIN=type E;		
RX	MEDLINE=94013372; PubMed=8408542;		
RA	Campbell K., East A.K., Collins M.D.;		
RT	"Gene probes for identification of the botulin neurotoxin gene and		
RT	specific identification of neurotoxin types B, E, and F.";		
RL	J. Clin. Microbiol. 31:2255-2262(1993).		
RN	[2]		
RP	SEQUENCE FROM N.A.		
RC	STRAIN=type E;		
RA	Campbell K.D.;		
RL	Submitted (JAN-1993) to the EMBL/GenBank/DBJ databases.		
DR	EMBL; X70818; CAA50149.1; -.		
DR	PIR; S48106; S48106.		
DR	GO; GO:0009405; P:pathogenesis; IEA.		
DR	InterPro; IPR008985; ConA_like_lec_gl.		
KW	Neurotoxin.		
FT	NON TER	1	
FT	NON TER	367	
FT	NON TER	367	
SQ	SEQUENCE	367 AA;	42902 MW; 346A610C2FF70262 CRC64;
Query Match 50.0%; Score 56; DB 2; Length 367;			
Best Local Similarity 53.8%; Pred. No. 1.3;			
Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps			
Qy	1 FNNFTVSFWLRLVP 13		
	: : : :		
Db	297 YKNFSISFWWRIP 309		
RESULT 23			
Q45862	PRELIMINARY;	PRT;	367 AA.
ID	Q45862		
AC	Q45862;		
DT	01-NOV-1996 (TrEMBLrel. 01, Created)		
DT	01-NOV-1996 (TrEMBLrel. 01, Last sequence update)		
DT	01-OCT-2003 (TrEMBLrel. 25, Last annotation update)		
DE	Botulinum neurotoxin type E (Fragment).		
GN	Name=BoNT/E;		
OS	Clostridium botulinum.		
OC	Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;		
OC	Clostridium.		
OX	NCBI_TaxID=1491;		
RN	[1]		
RP	SEQUENCE FROM N.A.		
RC	STRAIN=type E;		
RX	MEDLINE=94013372; PubMed=8408542;		
RA	Campbell K., East A.K., Collins M.D.;		
RT	"Gene probes for identification of the botulin neurotoxin gene and		
RT	specific identification of neurotoxin types B, E, and F.";		
RL	J. Clin. Microbiol. 31:2255-2262(1993).		
RN	[2]		
RP	SEQUENCE FROM N.A.		
RC	STRAIN=type E;		
RA	Campbell K.D.;		
RL	Submitted (JAN-1993) to the EMBL/GenBank/DBJ databases.		
DR	EMBL; X70815; CAA50146.1; -.		
DR	PIR; S21178; S21178.		
DR	GO; GO:0009405; P:pathogenesis; IEA.		
DR	InterPro; IPR008985; ConA_like_lec_gl.		
KW	Neurotoxin.		

RP IDENTIFICATION OF SUBSTRATE.
 RX MEDLINE=94124495; PubMed=9244407;
 RA Binz T., Blasi J., Yamasaki S., Baumeister A., Link E., Suedhof T.C.,
 RT Jahn R., Niemann H.;
 RL J. Biol. Chem. 269:1617-1620(1994).
 CC "Proteolysis of SNAP-25 by types E and A botulinum neurotoxins.";
 CC -1- FUNCTION: Botulinum toxin acts by inhibiting neurotransmitter
 release. It binds to peripheral neuronal synapses, is internalized
 and moves by retrograde transport up the axon into the spinal cord
 where it can move between postsynaptic and presynaptic neurons. It
 inhibits neurotransmitter release by acting as a zinc
 endopeptidase that catalyzes the hydrolysis of the 180-Arg-|-Ile-
 181 bond in SNAP-25.
 CC -1- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
 neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
 detected action on small molecule substrates.
 CC -1- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -1- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
 heavy chain (H). The light chain has the pharmacological activity,
 while the N- and C-terminal of the heavy chain mediate channel
 formation and toxin binding, respectively.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: There are seven antigenically distinct forms of
 botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
 CC -1- SIMILARITY: Belongs to peptidase family M27.
 CC -----
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 CC -----
 DR EMBL; X62089; CAA43999.1; -;
 DR EMBL; X62688; CAA43998.1; -;
 DR PIR; S08575; S08575.
 DR PIR; S21178; S21178.
 DR HSP; Q45894; 1E1H.
 DR MEROPS; M27.002; -;
 DR InterPro; IPR008985; ConA_like_1ec_gl.
 DR InterPro; IPR011065; Kunitz-like.
 DR InterPro; IPR000395; Peptidase_M27.
 DR InterPro; IPR006025; Pept M Zn BS.
 DR Pfam; PF01742; Peptidase_M27; 1.
 DR PRINTS; PR00760; BONTOTOXILYSIN.
 DR ProDom; PD001963; Bontotoxylisin; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; 1.
 KW Direct protein sequencing; Hydrolase; Metalloprotease; Neurotoxin;
 Transmembrane; Zinc.
 FT INIT MET 0
 FT CHAIN 1 421 Botulinum neurotoxin E light-chain.
 FT CHAIN 422 1250 Botulinum neurotoxin E heavy-chain.
 FT METAL 211 211 Zinc (catalytic) (By similarity).
 FT ACT_SITE 212 212 By similarity.
 FT METAL 215 215 Zinc (catalytic) (By similarity).
 FT DISULFID 411 425 Interchain (Probable).
 FT CONFLICT 176 176 R -> G (in Ref. 2).
 FT CONFLICT 197 197 C -> S (in Ref. 2 and 3).
 FT CONFLICT 339 339 R -> A (in Ref. 2).
 FT CONFLICT 772 772 I -> L (in Ref. 2).
 FT CONFLICT 962 963 FE -> LQ (in Ref. 2).
 FT CONFLICT 966 966 R -> A (in Ref. 2).
 FT CONFLICT 1194 1194 N -> NN (in Ref. 2).
 SQ SEQUENCE 1250 AA; 143712 MW; D9FCE26DDA041EB4 CRC64;

Query Match 50.8%; Score 56; DB 1; Length 1250;

Best Local Similarity 53.8%; Pred. No. 4.6;

Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVP 13

: ||::|||::|

Db 911 YKNFSISFWVRIP 923

RESULT 25
 BXE_CLOBU STANDARD; PRT; 1250 AA.
 ID AC P30995;
 DT 01-JUL-1993 (Rel. 26, Created)
 DT 01-JUL-1993 (Rel. 26, Last sequence update)
 DT 05-JUL-2004 (Rel. 44, Last annotation update)
 DE Botulinum neurotoxin type E precursor (EC 3.4.24.69) (BONT/E)
 DE (Bontotoxylisin E).
 OS Clostridium butyricum.
 OS Clostridia; Clostridiales; Clostridiaceae;
 OC Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae;
 OC Clostridium.
 OX NCBI_TaxID=1492;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC STRAIN=ATCC 43181, and ATCC 43755;
 RX MEDLINE=92181428; PubMed=1543481;
 RA Poulet S., Hauser D., Quanz M., Niemann H., Popoff M.R.;
 RT "Sequences of the botulinum neurotoxin E derived from Clostridium
 botulinum type E (strain Beluga) and Clostridium butyricum (strains
 ATCC 43181 and ATCC 43755).";
 RL Biochem. Biophys. Res. Commun. 183:107-113(1992).
 RN [2]
 RP SEQUENCE OF 1-251 FROM N.A.
 RC STRAIN=BL6340;
 RX MEDLINE=91237316; PubMed=2033376;
 RA Fujii N., Kimura K., Murakami T., Indoh T., Tsuzuki K., Yokosawa N.,
 RA Yashiki T., Oguma K.;
 RT "Cloning of a DNA fragment encoding the 5'-terminus of the botulinum
 RT type E toxin gene from Clostridium butyricum strain BL6340.";
 RL J. Gen. Microbiol. 137:519-525(1991).
 RN [3]
 RP SEQUENCE OF 1-48.
 RC STRAIN=5262;
 RA Gimenez J., Foley J., Dasgupta B.R.;
 RT "Neurotoxin type E from Clostridium botulinum and C. butyricum;
 RT partial sequence and comparison.";
 RL FASEB J. 2:A1750-A1750(1988).
 CC -1- FUNCTION: Botulinum toxin acts by inhibiting neurotransmitter
 release. It binds to peripheral neuronal synapses, is internalized
 and moves by retrograde transport up the axon into the spinal cord
 where it can move between postsynaptic and presynaptic neurons. It
 inhibits neurotransmitter release by acting as a zinc
 endopeptidase.
 CC -1- CATALYTIC ACTIVITY: Limited hydrolysis of proteins of the
 neuroexocytosis apparatus, synaptobrevins, SNAP25 or syntaxin. No
 detected action on small molecule substrates.
 CC -1- COFACTOR: Binds 1 zinc ion per subunit (By similarity).
 CC -1- SUBUNIT: Disulfide-linked heterodimer of a light chain (L) and a
 heavy chain (H). The light chain has the pharmacological activity,
 while the N- and C-terminal of the heavy chain mediate channel
 formation and toxin binding, respectively.
 CC -1- SUBCELLULAR LOCATION: Secreted.
 CC -1- MISCELLANEOUS: There are seven antigenically distinct forms of
 botulinum neurotoxin: Types A, B, C1, D, E, F, and G.
 CC -1- SIMILARITY: Belongs to peptidase family M27.
 CC -----
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 CC -----
 DR EMBL; X62088; CAA43998.1; -;
 DR EMBL; X53180; CAA37321.1; -;
 DR PIR; JH0256; JH0256.
 DR HSP; Q45894; 1E1H.
 DR MEROPS; M27.002; -;
 DR InterPro; IPR008985; ConA_like_1ec_gl.

DR InterPro; IPR011065; Kunitz like.
 DR InterPro; IPR000395; Peptidase_M27.
 DR InterPro; IPR006025; Pept_M_Zn_BS.
 DR Pfam; PF01742; Peptidase_M27; 1.
 DR PRINTS; PR00760; BONTOKILYSIN.
 DR ProDom; PD01963; BONTOKILYSIN; 1.
 DR PROSITE; PS00142; ZINC_PROTEASE; 1.
 KW Direct protein sequencing; Hydrolase; Metalloprotease; Neurotoxin;
 Transmembrane; Zinc.
 FT INIT_MET 0
 FT CHAIN 1 421 Botulinum neurotoxin E light-chain.
 FT CHAIN 422 1250 Botulinum neurotoxin E heavy-chain.
 FT METAL 211 211 Zinc (catalytic) (By similarity).
 FT ACT_SITE 212 212 By similarity.
 FT METAL 215 215 Zinc (catalytic) (By similarity).
 FT DISULFID 411 425 Interchain (Probable).
 FT CONFLICT 229 229 K -> M (in Ref. 2).
 SQ SEQUENCE 1250 AA; 143265 MW; 8171B5B2C312857 CRC64;

Query Match 50.0%; Score 56; DB 1; Length 1250;
 Best Local Similarity 53.8%; Pred. No. 4.6;
 Matches 7; Conservative 5; Mismatches 1; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVP i3
 : ||:|||:|
 Db 911 YKNFSISFWVRIP 923

Search completed: January 25, 2005, 06:06:23
 Job time : 71.4167 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: January 26, 2005, 07:04:37 ; Search time 130.667 Seconds
(without alignments)
57.653 Million cell updates/sec

Title: US-09-806-703A-14

Perfect score: 112

Sequence: 1 FNNFTVSFWLVRPKVSASHLE 21

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 211

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%

Listing first 500 summaries

Database : A_Geneseq_23Sep04.*

1: geneseq1980s.*

2: geneseq1990s.*

3: geneseq2000s.*

4: geneseq2001s.*

5: geneseq2002s.*

6: geneseq2003as.*

7: geneseq2003bs.*

8: geneseq2004s.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	112	100.0	21	2 AAR11896	Aar11896 Immunogen
2	112	100.0	21	2 AAW06130	Aaw06130 Tetanus t
3	112	100.0	21	2 AAR88397	Aar88397 T-cell an
4	112	100.0	21	2 AAW46449	Aaw46449 Broad ran
5	112	100.0	21	2 AAW67034	Aaw67034 Tetanus t
6	112	100.0	21	2 AAW67579	Aaw67579 T-cell ep
7	112	100.0	21	2 AAW73222	Aaw73222 Tetanus t
8	112	100.0	21	3 AAY92626	Aay92626 Foreign e
9	112	100.0	21	3 AAY99876	Aay99876 Tetanus t
10	112	100.0	21	3 AAY84428	Aay84428 Amino aci
11	112	100.0	21	3 AAY49260	Aay49260 CD4+ T ce
12	112	100.0	21	3 AAB45512	Aab45512 Tetanus P
13	112	100.0	21	4 AAE11764	Aae11764 Clostridi
14	112	100.0	21	4 AAB49072	Aab49072 Tetanus t
15	112	100.0	21	4 AAB46173	Aab46173 Tetanus t
16	112	100.0	21	4 AAB68637	Aab68637 HER-2 B c
17	112	100.0	21	4 AAB61958	Aab61958 Tetanus T
18	112	100.0	21	4 AAB20144	Aab20144 Tetanus t
19	112	100.0	21	4 AAB85453	Aab85453 Universal
20	112	100.0	21	4 AAB85702	Aab85702 Amino aci
21	112	100.0	21	5 AAG31775	Aag31775 T helper
22	112	100.0	21	5 AAU11415	Aau11415 Tetanus t
23	112	100.0	21	6 ABP72695	Abp72695 Tetanus t
24	112	100.0	21	6 ADA25170	Ada25170 C. tetani
25	112	100.0	21	6 AAO30455	Aao30455 Tetanus t

26	112	100.0	21	7 ABR82483	AbR82483 Tetanus t
27	112	100.0	21	7 ADC09977	AdC09977 Tetanus t
28	112	100.0	21	7 ADC89659	AdC89659 C. tetani
29	112	100.0	21	7 ADC81610	AdC81610 Tetanus t
30	112	100.0	21	7 ADD71439	AdD71439 HLA-DP4 b
31	112	100.0	21	8 AAO24396	Aao24396 HLA-A24-r
32	112	100.0	21	8 ADL64022	AdL64022 Tetanus t
33	112	100.0	21	8 ADL643947	AdL643947 Tetanus t
34	112	100.0	21	8 ADL97909	AdL97909 Tetanus t
35	112	100.0	21	8 ADM06895	AdM06895 Tetanus t
36	112	100.0	21	8 ADM043876	AdM043876 Amino aci
37	112	100.0	21	8 ADP02877	AdP02877 Tetanus t
38	112	100.0	21	8 ADP02884	AdP02884 Tetanus t
39	112	100.0	21	8 ADP024821	AdP024821 Tetanus t
40	112	100.0	21	8 ADP04308	AdP04308 Tetanus t
41	112	100.0	21	8 ADP48562	AdP48562 Promiscuo
42	112	100.0	21	8 ADP90538	AdP90538 Tetanus t
43	112	100.0	21	8 AAB46176	Aab46176 Tetanus t
44	112	100.0	21	8 ADP02901	AdP02901 Fusion pr
45	112	100.0	31	3 AAY92653	Aay92653 PSMpep010
46	112	100.0	31	3 AAY92654	Aay92654 PSMpep011
47	112	100.0	31	3 AAY92655	Aay92655 PSMpep012
48	112	100.0	32	2 AAR62702	Aar62702 LHRH-cont
49	112	100.0	33	4 AAB49075	Aab49075 Amyloid b
50	112	100.0	34	5 AAU11421	Aau11421 Synthetic
51	112	100.0	36	4 AAG63662	Aag63662 Peptide c
52	112	100.0	36	4 AAG63515	Aag63515 A peptide
53	112	100.0	36	8 ADP02886	AdP02886 Tetanus t
54	112	100.0	37	5 AAU11425	Aau11425 Synthetic
55	112	100.0	43	4 AAB49076	Aab49076 Amyloid b
56	112	100.0	43	4 AAB46177	Aab46177 Tetanus t
57	112	100.0	43	8 ADP02902	AdP02902 Fusion pr
58	112	100.0	44	4 AAB49090	Aab49090 Amyloid b
59	112	100.0	44	4 AAB46194	Aab46194 Tetanus t
60	112	100.0	44	8 ADP02917	AdP02917 Fusion pr
61	112	100.0	50	5 AAU11429	Aau11429 Synthetic
62	112	100.0	51	4 AAB49091	Aab49091 Amyloid b
63	112	100.0	51	4 AAB46195	Aab46195 Tetanus t
64	112	100.0	51	8 ADP02918	AdP02918 Fusion pr
65	112	100.0	59	4 AAG63661	Aag63661 Peptide c
66	112	100.0	59	4 AAG63513	Aag63513 A peptide
67	112	100.0	63	2 AAR14263	Aar14263 Immunogen
68	112	100.0	64	2 AAR14261	Aar14261 Immunogen
69	112	100.0	64	8 ADM06902	AdM06902 Mature ra
70	112	100.0	65	2 AAR14265	Aar14265 Immunogen
71	112	100.0	65	2 AAR14262	Aar14262 Immunogen
72	112	100.0	68	8 ADM06904	AdM06904 Mature gh
73	112	100.0	68	8 ADM06903	AdM06903 Mature gh
74	112	100.0	72	4 AAB46190	Aab46190 Tetanus t
75	112	100.0	74	8 ADP02897	AdP02897 Fusion pr
76	112	100.0	77	2 AAR14264	Aar14264 Immunogen
77	112	100.0	79	8 ADP02915	AdP02915 Fusion pr
78	112	100.0	101	8 ADP02896	AdP02896 Fusion pr
79	112	100.0	109	4 AAB20149	Aab20149 Growth di
80	112	100.0	109	4 AAB20151	Aab20151 Growth di
81	112	100.0	109	4 AAB20150	Aab20150 Growth di
82	112	100.0	109	4 AAB20148	Aab20148 Growth di
83	112	100.0	121	8 ADL63984	AdL63984 Chimeric
84	112	100.0	121	8 ADL63908	AdL63908 Chimeric
85	112	100.0	121	8 ADL97891	AdL97891 Human IL-
86	112	100.0	122	3 AAB45524	Aab45524 Modified
87	112	100.0	122	3 AAB45507	Aab45507 Modified
88	112	100.0	123	8 ADL63986	AdL63986 Chimeric
89	112	100.0	123	8 ADL63910	AdL63910 Chimeric
90	112	100.0	123	8 ADL97893	AdL97893 Murine IL
91	112	100.0	124	3 AAB45496	Aab45496 Modified
92	112	100.0	124	3 AAB45515	Aab45515 Modified
93	112	100.0	128	3 AAB45529	Aab45529 Modified
94	112	100.0	128	3 AAB45525	Aab45525 Modified
95	112	100.0	128	3 AAB45508	Aab45508 Modified
96	112	100.0	130	3 AAB45506	Aab45506 Modified
97	112	100.0	130	3 AAB45497	Aab45497 Modified
98	112	100.0	130	3 AAB45509	Aab45509 Modified

99	112	100.0	130	3	AAB45516	Aab45516 Modified	172	112	100.0	677	6	AAE35691	Aae35691 TeNT-Hc-D
100	112	100.0	130	3	AAB45528	Aab45528 Modified	173	112	100.0	693	3	AAE35647	Aay92647 Mutant hu
101	112	100.0	130	3	AAB45521	Aab45521 Modified	174	112	100.0	693	3	AAE35648	Aay92648 Mutant hu
102	112	100.0	132	3	AAB45498	Aab45498 Modified	175	112	100.0	698	3	AAE35661	Aay92661 Mutant mu
103	112	100.0	132	3	AAB45520	Aab45520 Modified	176	112	100.0	703	7	AAE35662	Aay92662 Mutant mu
104	112	100.0	132	3	AAB45495	Aab45495 Modified	177	112	100.0	708	7	AAE35679	Abr82479 Modified
105	112	100.0	132	8	ADL63987	Adl63987 Chimeric	178	112	100.0	713	7	ABR82480	Abr82480 Modified
106	112	100.0	132	8	ADL63988	Adl63988 Chimeric	179	112	100.0	717	7	ABR82478	Abr82478 Modified
107	112	100.0	132	8	ADL63912	Adl63912 Chimeric	180	112	100.0	750	3	AAE35637	Aay92637 Mutant hu
108	112	100.0	132	8	ADL63911	Adl63911 Chimeric	181	112	100.0	750	3	AAE35639	Aay92639 Mutant hu
109	112	100.0	132	8	ADL97894	Adl97894 Murine IL	182	112	100.0	750	3	AAE35638	Aay92638 Mutant hu
110	112	100.0	132	8	ADL97895	Adl97895 Chimeric	183	112	100.0	750	3	AAE35631	Aay92631 Mutant hu
111	112	100.0	133	8	ADL63985	Adl63985 Chimeric	184	112	100.0	750	3	AAE35645	Aay92645 Mutant hu
112	112	100.0	133	8	ADL64006	Adl64006 Chimeric	185	112	100.0	750	3	AAE35627	Aay92627 Mutant hu
113	112	100.0	133	8	ADL64007	Adl64007 Chimeric	186	112	100.0	750	3	AAE35632	Aay92632 Mutant hu
114	112	100.0	133	8	ADL63968	Adl63968 Chimeric	187	112	100.0	750	3	AAE35638	Aay92638 Mutant hu
115	112	100.0	133	8	ADL63909	Adl63909 Chimeric	188	112	100.0	750	3	AAE35630	Aay92630 Mutant hu
116	112	100.0	133	8	ADL63967	Adl63967 Chimeric	189	112	100.0	750	3	AAE35633	Aay92633 Mutant hu
117	112	100.0	133	8	ADL97937	Adl97937 Human IL-	190	112	100.0	750	3	AAE35646	Aay92646 Mutant hu
118	112	100.0	133	8	ADL97936	Adl97936 Human IL-	191	112	100.0	750	3	AAE35634	Aay92634 Mutant hu
119	112	100.0	133	8	ADL97892	Adl97892 Human IL-	192	112	100.0	750	3	AAE35629	Aay92629 Mutant hu
120	112	100.0	136	4	AAB49089	Aab49089 Amyloid b	193	112	100.0	750	3	AAE35636	Aay92636 Mutant hu
121	112	100.0	139	3	AAB45510	Aab45510 Modified	194	112	100.0	750	3	AAE35642	Aay92642 Mutant hu
122	112	100.0	141	3	AAE35499	Aay35499 Modified	195	112	100.0	750	3	AAE35644	Aay92644 Mutant hu
123	112	100.0	143	3	AAE35252	Aay35252 N6 polyep	196	112	100.0	750	3	AAE35659	Aay92659 Mutant mu
124	112	100.0	145	3	AAE35530	Aab45530 Modified	197	112	100.0	756	3	AAE35660	Aay92660 Mutant mu
125	112	100.0	147	3	AAE35522	Aab45522 Modified	198	112	100.0	761	3	AAE35714	Aae35714 TeNT-Hc-D
126	112	100.0	158	2	AAW81333	Aaw81333 TNF30-2,	199	112	100.0	810	6	AAE35715	Aae35715 TeNT-Hc-D
127	112	100.0	158	2	AAW81335	Aaw81335 TNF30-4,	200	112	100.0	810	6	AAE35715	Aae35715 TeNT-Hc-D
128	112	100.0	158	2	AAW81336	Aaw81336 TNF30-5,	201	112	100.0	875	8	ADL90085	Adl90085 Tetanus t
129	112	100.0	158	2	AAW81332	Aaw81332 TNF30-1,	202	112	100.0	882	4	AAE07889	Aae07889 Modified
130	112	100.0	158	2	AAW81334	Aaw81334 TNF30-3,	203	112	100.0	907	4	AAE07891	Aae07891 Modified
131	112	100.0	158	5	ABB07282	Abb07282 Human TNF	204	112	100.0	999	6	AAE35712	Aae35712 TeNT-Hc-D
132	112	100.0	158	5	ABB07279	Abb07279 Human TNF	205	112	100.0	1052	4	AAE07903	Aae07903 C. botuli
133	112	100.0	158	5	ABB07278	Abb07278 Human TNF	206	112	100.0	1112	4	AAE07902	Aae07902 C. botuli
134	112	100.0	158	5	ABB07274	Abb07274 Human TNF	207	112	100.0	1212	6	AAE35709	Aae35709 TeNT-Hc-D
135	112	100.0	158	5	ABB07283	Abb07283 Human TNF	208	112	100.0	1212	6	AAE35708	Aae35708 TeNT-Hc-D
136	112	100.0	160	4	AAE20153	Aab20153 Growth di	209	112	100.0	1315	4	AAE61169	Aab61169 Clostridi
137	112	100.0	173	3	AAE84426	Aay84426 An osteop	210	112	100.0	1315	8	ADL90423	Adl90423 Clostridi
138	112	100.0	188	3	AAE84423	Aay84423 An osteop	211	112	100.0	1807	4	AAE85697	Aae85697 Recombina
139	112	100.0	194	6	AAO30489	Aao30489 Human TNF	212	112	100.0	2028	4	AAE85698	Aab85698 Recombina
140	112	100.0	194	6	AAO30488	Aao30488 Human TNF	213	112	100.0				
141	112	100.0	209	8	ADH50816	Adh50816 Membrane							
142	112	100.0	216	3	AAE352665	Aay352665 MUC-1 ana							
143	112	100.0	218	3	AAE35253	Aay35253 N10 polye							
144	112	100.0	240	3	AAE49254	Aay49254 N11 polye							
145	112	100.0	254	4	AAE20152	Aab20152 Growth di							
146	112	100.0	285	6	AAO30457	Aao30457 hIL5-P30-							
147	112	100.0	285	6	AAO30458	Aao30458 hIL5-P2-P							
148	112	100.0	287	6	AAO30459	Aao30459 hIL5.36 v							
149	112	100.0	287	6	AAO30460	Aao30460 hIL5.37 v							
150	112	100.0	385	8	ADL64008	Adl64008 Protein e							
151	112	100.0	385	8	ADL63969	Adl63969 Protein e							
152	112	100.0	390	3	AAE49255	Aay49255 N19 polye							
153	112	100.0	394	8	ADL64009	Adl64009 Protein e							
154	112	100.0	394	8	ADL64010	Adl64010 Protein e							
155	112	100.0	394	8	ADL63971	Adl63971 Protein e							
156	112	100.0	394	8	ADL63970	Adl63970 Protein e							
157	112	100.0	452	2	AAE12471	Aar12471 Tetanus t							
158	112	100.0	453	4	AAE31427	Aab31427 Amino aci							
159	112	100.0	463	2	AAE00921	Aay00921 Tetanus t							
160	112	100.0	514	6	AAO30491	Aao30491 Human TNF							
161	112	100.0	514	6	AAO30490	Aao30490 Human TNF							
162	112	100.0	514	6	AAO30495	Aao30495 Human TNF							
163	112	100.0	517	6	AAO30492	Aao30492 Human TNF							
164	112	100.0	537	7	ABR82481	Abr82481 Truncated							
165	112	100.0	573	1	AAE70345	Aap70345 Portion o							
166	112	100.0	605	4	AAE07897	Aae07897 Modified							
167	112	100.0	618	2	AAW48909	Aaw48909 SOD-1/TTC							
168	112	100.0	661	4	AAE31429	Aab31429 Shed anti							
169	112	100.0	665	4	AAE07895	Aae07895 Modified							
170	112	100.0	665	4	AAE35689	Aae35689 Dipt HN d							
171	112	100.0	677	6	AAE35690	Aae35690 TeNT-Hc-D							

ALIGNMENTS

RESULT 1

AAE11896	
ID	AAE11896 standard; peptide; 21 AA.
XX	
AC	AAE11896;
XX	
DT	24-OCT-2003 (revised)
DT	27-AUG-2003 (revised)
DT	25-MAR-2003 (revised)
DT	19-JUL-1991 (first entry)
XX	
DE	Immunogenic conjugate constituent peptide, TT3.
XX	
KW	Malaria vaccine; major histocompatibility complex.
OS	Viruses.
XX	
PH	Key
FT	Peptide
XX	Location/Qualifiers
XX	1. .14
XX	/label= active fragment (claimed)
XX	
XX	EP427347-A.
XX	
XX	15-MAY-1991.
XX	
XX	07-NOV-1990; 90EP-00202948.
XX	
XX	10-NOV-1989; 89IT-00022355.

XX PA (ENIE) ENRICERCH SPA.
 XX PI Bianchi E, Pessi A, Corradin G;
 XX DR WPI; 1991-141874/20.
 XX PT Synthetic peptide(s) used as universal carriers - for preparing
 XX PT immunogenic conjugates used as vaccines against plasmodium falciparum.
 XX PS Claim 1; Page 13; 16pp; English.
 XX CC This peptide corresponds to residues 947-967 of Tetanus toxin. It can be
 XX CC used as a universal carrier for the prepn. of an immunogenic conjugate.
 XX CC It is covalently bound to a peptide or polysaccharide hapten derived from
 XX CC a pathogen. This conjugate can be used as a vaccine for malaria. This
 XX CC peptide is recognised by different T- helper cell clones in association
 XX CC with alleles of the human MHC. It contains 2 epitopes: (a) 953-967,
 XX CC recognised by DR5-restricted clones; and (b) 947-960, recognised by all
 XX CC other DR and DP- restricted clones. (Updated on 25-MAR-2003 to correct PI
 XX CC field.) (Updated on 27-AUG-2003 to correct OS field.) (Updated on 24-OCT-
 XX CC 2003 to standardise OS field)
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 2
 ID AAW06130 standard; peptide; 21 AA.
 AC AAW06130;
 XX DT 07-FEB-1997 (first entry)
 XX DE Tetanus toxoid protein T-cell epitope.
 XX KW Cholesteryl ester transfer protein; CETP; antigen; vaccine;
 XX KW cardiovascular disease; atherosclerosis; tetanus toxoid; T-cell epitope.
 XX OS Clostridium tetani.
 XX PN WO9634888-A1.
 XX PD 07-NOV-1996.
 XX PF 01-MAY-1996; 96WO-US006147.
 XX PR 01-MAY-1995; 95US-00432483.
 XX PA (TCEL-) T CELL SCI INC.
 XX PI Rittershaus CW, Thomas LJ;
 XX DR WPI; 1996-506103/50.
 XX PT Cholesteryl ester transfer protein B cell epitope linked to T cell
 XX PT epitope - used to generate vaccine to regulate CETP activity for
 XX PT decreasing the risk of developing a cardiovascular disease e.g.
 XX PT atherosclerosis.
 XX PS Claim 11; Page 43; 72pp; English.
 XX CC A helper T-cell epitope (AAW06130) comprises amino acids 947-967 of
 XX CC tetanus toxoid protein. It can be utilised in novel peptide vaccines (see
 XX CC also AAW06129, AAW06132) also including B-cell epitope(s) from human or

CC rabbit cholesteryl ester transfer protein (CETP) to elicit an immune
 CC response against endogenous CETP activity, thereby treating or preventing
 CC a cardiovascular disease, such as atherosclerosis
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 3
 ID AAR88397 standard; peptide; 21 AA.
 AC AAR88397;
 XX DT 12-JUN-1996 (first entry)
 XX DE T-cell antigen TT3 peptide.
 XX KW T-antigen; vaccine; antibody; T-cell; T-lymphocyte; alpha-helix;
 XX KW coiled-coil heterodimer; core peptide; subunit.
 XX OS Synthetic.
 XX PN WO9531480-A1.
 XX PD 23-NOV-1995.
 XX PF 18-MAY-1995; 95WO-CA000293.
 XX PR 18-MAY-1994; 94US-00245507.
 XX PA (SPIS-) SPI SYNTHETIC PEPTIDES INC.
 XX PI Houston ME, Zhou NE, Kay CM, Hodges RS, Cachia PJ, Irvin RT;
 XX DR WPI; 1996-010880/01.
 XX PT Hetero-dimeric polypeptide immunogen in coiled-coil configuration with
 XX PT different antigens on each sub-unit - useful in vaccines and for antibody
 XX PT prodn.
 XX PS Claim 7; Page 62; 95pp; English.
 XX CC This T-cell antigen TT3 peptide may be attached to a core peptide
 XX CC contained in one of the 2 subunits of an alpha-helical coiled-coil
 XX CC heterodimer. Each core peptide is comprised of terminal and internal AA
 XX CC repeat sequences. This peptide antigen is attached to the core peptide
 XX CC through covalent linkages to certain AA of the internal repeats. The 2
 XX CC subunits of the heterodimer are arranged in a stable alpha-helical coiled
 XX CC -coil configuration having a 1:1 stoichiometry, and the peptide antigen
 XX CC is disposed toward the outer surfaces of the configuration. The
 XX CC heterodimer may be used as a synthetic vaccine (optionally multivalent)
 XX CC or to generate antibodies
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 2; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 4

CC epitope (e.g. P2 and/or P30) are also claimed. The method is used to
 CC treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, PGF8b and Her2, respectively
 XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

RESULT 9
 AAY99876
 ID AAY99876 standard; protein; 21 AA.
 XX
 AC AAY99876;
 XX
 XX 03-OCT-2000 (first entry)
 DT
 DE Tetanus toxin T cell epitope helper peptide P30.
 XX
 XX Human; MAGE-10; tumour rejection antigen precursor; bladder cancer;
 KW prostate cancer; lung cancer; cancer detection; oesophageal cancer;
 KW head and neck cancer; melanoma; myeloma; sarcoma; immunogen;
 KW tetanus toxin.
 XX
 OS Homo sapiens.
 XX
 XX WO200026407-A1.
 PN
 XX 11-MAY-2000.
 PD
 XX 15-OCT-1999; 99WO-US024258.
 PF
 XX 30-OCT-1998; 98US-00183714.
 PR
 XX (LUDW-) LUDWIG INST CANCER RES.
 PA
 XX Boon-Falleur T, Brasseur F, Rimoldi D, Deplaen E;
 PI
 XX WPI; 2000-451624/39.
 DR
 XX Determining presence of cancer in samples, especially useful for
 PT detecting bladder, prostate and lung cancer comprises assaying sample for
 PT expression of tumor rejection antigen precursor MAGE-10.
 XX
 XX Example 12; Page 14; 26pp; English.

CC The present sequence is a tetanus toxin T cell epitope known as Helper
 CC Peptide P30. Hybrids of this peptide and an immunogenic peptide derived
 CC from tumour rejection antigen precursor MAGE-10 were used to generate
 CC polyclonal antiserum against MAGE-10. MAGE-10 binding monoclonal
 CC antibodies can be used to detect MAGE-10 expression. A correlation
 CC between MAGE-10 expression and cancer has been discovered and thus by
 CC determining the presence of MAGE-10, the presence of cancer can be
 CC determined. MAGE-10 expression can be detected using an immunoassay, an
 CC oligonucleotide hybridisation assay or via other standard techniques.
 CC This method is especially useful for determining the presence of bladder,
 CC oesophageal, head and neck, prostate or lung cancer, or melanoma, myeloma
 CC or sarcoma
 XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 10
 AAY84428

XX ID AAY84428 standard; peptide; 21 AA.
 AC AAY84428;
 XX
 XX 25-JUL-2000 (first entry)
 DT
 DE Amino acid sequence of the tetanus toxoid P30 epitope.
 XX
 XX Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 KW tumour necrosis factor receptor; type II transmembrane protein;
 KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 KW osteoporosis; bone resorption; tetanus toxoid P30 epitope.
 XX
 OS Clostridium tetani.
 XX
 XX WO200015807-A1.
 PN
 XX 23-MAR-2000.
 PD
 XX 13-SEP-1999; 99WO-DK000481.
 PF
 XX 15-SEP-1998; 98DK-00001164.
 PR
 XX 02-OCT-1998; 98US-0102896P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Halkier T, Haaning J;
 PI
 XX WPI; 2000-271444/23.
 DR
 XX In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.
 PT
 XX Example; Page 106; 110pp; English.

CC The present sequence represents the tetanus toxoid P30 epitope. It is
 CC used to create a fusion protein with murine osteoprotegerin ligand
 CC (OPGL). Osteoprotegerin is a secreted member of the tumour necrosis
 CC factor receptor family, which blocks osteoclastogenesis in a dose
 CC dependent manner. The OPGL protein is synthesised as a type II
 CC transmembrane protein. The murine and human OPGL polypeptides are 87%
 CC homologous. OPGL is a potent osteoclast differentiation factor when
 CC combined with CSF-1. It is not capable of inducing osteoclast
 CC differentiation in the absence of CSF-1. OPGL is also an activator of
 CC mature osteoclasts. The specification describes a method for the in vivo
 CC down-regulation of OPGL activity in an animal. The method comprises using
 CC at least one OPGL polypeptide or subsequence, and/or at least one OPGL
 CC analogue to induce an immune response in the animal. The method and OPGL
 CC polypeptide are useful for treating, preventing and ameliorating
 CC osteoporosis or other diseases or conditions characterised by excessive
 CC bone resorption
 XX
 SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

RESULT 11
 AAY49260
 ID AAY49260 standard; peptide; 21 AA.
 XX
 AC AAY49260;

XX DT 07-FEB-2000 (first entry)
 XX DE CD4+ T cell epitope P30TT fragment.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX PF 27-APR-1999; 99WO-IB000844.
 XX PR 27-APR-1998; 98GB-00008932.
 XX PA (CHIR-) CHIRON SPA.
 XX PI Rappuoli R, Grandi G;
 XX DR WPI; 2000-023325/02.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 PT diseases caused by encapsulated bacteria.
 XX PS Disclosure; Page 36; 76pp; English.
 XX CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. Sequences AAY49256-266 represent CD4+ T cell epitopes inserted
 CC in the recombinant polypeptide carrier proteins
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 12
 AAB45512
 ID AAB45512 standard; protein; 21 AA.
 AC AAB45512;
 XX DT 26-FEB-2001 (first entry)
 XX DE Tetanus P30 epitope SEQ ID NO: 24.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Clostridium tetani.
 XX PN WO200065058-A1.
 XX PD 02-NOV-2000.
 XX

PF 19-APR-2000; 2000WO-DK000205.
 XX 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX (MEBI-) M & E BIOTECH AS.
 XX PA Klysner S;
 PI WPI; 2000-672791/65.
 DR Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX Example 6; Page 137; 172pp; English.
 XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 3; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 13
 AAE11764
 ID AAE11764 standard; peptide; 21 AA.
 XX AC AAE11764;
 XX DT 18-DEC-2001 (first entry)
 XX DE Clostridium tetani P30 epitope.
 XX KW Amyloid protein; neuroprotective; nootropic; immunostimulant; vaccine;
 KW Alzheimer's disease; anticonvulsant; gene therapy; Pick's disease;
 KW antidiabetic; systemic amyloidosis; maturity onset diabetes; ALS;
 KW amyotrophic lateral sclerosis; Parkinson's disease; encephalopathy;
 KW Huntington's disease; fronto-temporal dementia; P30 epitope.
 XX OS Clostridium tetani.
 XX PN WO200162284-A2.
 XX PD 30-AUG-2001.
 XX PF 19-FEB-2001; 2001WO-DK000113.
 XX PR 21-FEB-2000; 2000DK-00000265.
 PR 01-MAR-2000; 2000US-0186295P.
 XX (MEBI-) M & E BIOTECH AS.
 XX PI Birk P, Jensen MR, Nielsen KG;
 XX WPI; 2001-589796/66.
 DR N-PSDB; AAD18756.
 XX In vivo down-regulation of amyloid protein for the treatment of
 PT Alzheimer's, comprises presenting an amyloidogenic polypeptide or its

XX PS Disclosure; Page 28; 143pp; English.

XX CC This invention describes a novel method of preventing or treating a

XX CC disease associated with amyloid deposits of amyloid precursor protein

XX CC (APP) Abeta fragments in the brain of a patient, which comprises

XX CC administering to the patient: (a) an antibody that binds to Abeta, the

XX CC antibody binds to an amyloid deposit and induces a clearing response (Fc

XX CC receptor mediated phagocytosis) against it (b) a polypeptide containing

XX CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent

XX CC that induces an immunogenic response against residues 1-3 to 7-11 of

XX CC Abeta. The products of the invention have neurotropic and neuroprotective

XX CC activity. The method is also useful for monitoring a course of treatment

XX CC being administered to a patient e.g. active and passive immunization. The

XX CC methods are useful for prophylactic and therapeutic treatment of

XX CC Alzheimer's disease

XX SQ Sequence 21 AA;

Query Match Score 112; DB 4; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 16

AAB68637

ID AAB68637 standard; peptide; 21 AA.

XX AC AAB68637;

XX DT 30-APR-2001 (first entry)

XX DE HER-2 B cell peptide P30.

XX KW Cytostatic; immune response; HER-2; human; epitope; cancer; breast;

XX KW ovarian; lung; prostate; colon.

XX OS Unidentified.

XX FN WO200108636-A2.

XX PD 08-FEB-2001.

XX PF 03-AUG-2000; 2000WO-US021222.

XX PR 03-AUG-1999; 99US-0146869P.

XX PA (OHIS) UNIV OHIO STATE.

XX PI Kaumaya PT, Stevens VC, Triozzi PL;

XX DR WPI; 2001-182849/18.

XX PT Compositions comprising polypeptides and polynucleotides for stimulating

XX PT the immune system and for treating malignancies associated with

XX PT overexpression of the HER-2 protein.

XX PS Claim 4; Page 38; 51pp; English.

XX CC The present invention relates to compositions for stimulating the immune

XX CC system and for treating malignancies associated with overexpression of

XX CC the HER-2 protein. The compositions comprise immunogenic groups of the

XX CC HER-2 proteins. The present sequence is one such peptide used in the

XX CC compositions of the present invention. The compositions can be used for

XX CC treating cancer, e.g. breast, ovarian, lung, prostate and colon cancers

XX SQ Sequence 21 AA;

Query Match Score 112; DB 4; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 17

AAB61958

ID AAB61958 standard; peptide; 21 AA.

XX AC AAB61958;

XX DT 14-MAY-2001 (first entry)

XX DE Tetanus Toxoid universal Th epitope TT947.

XX KW Fcalpha receptor; epidermal growth factor; EGF; HER2 receptor; tumour;

XX KW immune thrombocytopenia purpura; systemic lupus erythematosus; vaccine;

XX KW cyostatic; antiviral; protozoicide; antifungal; immunosuppressive;

XX KW antiinflammatory; dermatological; hemostatic; tetanus toxoid.

XX OS Clostridium tetani.

XX FN WO200109186-A2.

XX PD 08-FEB-2001.

XX PF 25-JUL-2000; 2000WO-US020158.

XX PR 30-JUL-1999; 99US-00364088.

XX PR 10-MAR-2000; 2000US-00523279.

XX PA (MEDA-) MEDAREX INC.

XX PI Deo YM, Goldstein J, Graziano R, Keller T;

XX DR WPI; 2001-123318/13.

XX PT Bispecific molecule comprising specific binding sites for an Fc-alpha

XX PT receptor and an epidermal growth factor, used to induce effector cell

XX PT killing of tumor cells.

XX PS Example 7; Fig 24; 183pp; English.

XX CC The invention relates to a bispecific molecule (I) comprising specific

XX CC binding sites for an Fcalpha receptor and an epidermal growth factor

XX CC (EGF) receptor. It also provides bispecific molecule (II) comprising a

XX CC human antibody, preferably a single chain antibody, specific for an

XX CC Fcalpha receptor, linked to EGF; a bispecific molecule (III) comprising

XX CC specific binding sites for an Fcalpha receptor and a HER2 receptor; (3) a

XX CC multispecific molecule (IV) comprising specific binding sites for Fcalpha

XX CC receptor, HER2 receptor and EGF receptor; (4) a multispecific molecule

XX CC (V) comprising a human antibody specific for an Fcalpha receptor, a human

XX CC antibody specific for a HER2 receptor; and EGF. (I)-(V) can be used for

XX CC inducing effector cell killing of tumor cells. The molecules can be used

XX CC to treat or prevent viral, protozoal, or fungal infections, or autoimmune

XX CC diseases such as immune thrombocytopenia purpura and systemic lupus

XX CC erythematosus. The present sequence represents a wild-type tetanus toxoid

XX CC epitope TT947

XX SQ Sequence 21 AA;

Query Match Score 112; DB 4; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 18
 AAB20144
 ID AAB20144 standard; peptide; 21 AA.
 XX
 AC AAB20144;
 XX
 DT 30-APR-2001 (first entry)
 XX
 DE Tetanus toxin T-cell epitope P30.
 XX
 KW Tetanus toxin; T-cell epitope; growth differentiation factor 8; GDF-8;
 KW myostatin; down-regulation; vaccine; muscle; meat; cachexia; cardiac.
 XX
 OS Clostridium tetani.
 XX
 PW WO200105820-A2.
 XX
 PD 25-JAN-2001.
 XX
 PF 20-JUL-2000; 2000WO-DK000413.
 XX
 PR 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-014527SP.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Halkier T, Mouritsen S, Klyener S;
 XX
 DR WPI; 2001-112680/12.
 XX
 PT Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.
 XX
 PS Disclosure; Page 95; 110pp; English.
 XX
 CC The present sequence is that of the promiscuous tetanus toxic T-cell
 CC epitope P30. It is an object of the invention to produce a recombinant
 CC therapeutic vaccine capable of effecting down-regulation of growth
 CC differentiation factor 8 (GDF-8) in order to increase the muscle growth
 CC rate of farm animals. Variants of GDF-8 (see AAB20145-53) are provided
 CC that are capable of breaking autotolerance against autologous GDF-8.
 CC These comprise the C-terminal portion of human GDF-8 in which a portion
 CC of the native sequence is replaced by a T-cell epitope such as the
 CC promiscuous tetanus toxin T-cell epitope P2 or P30. The high number of
 CC Cys residues in the C-terminal region limits the possible sites in which
 CC the T-cell epitope can be positioned without major disturbance of the
 CC native 3-dimensional structure of the protein. Nucleic acids encoding the
 CC GDF-8 variants can be used for genetic immunisation of the animals. Down-
 CC regulation of GDF-8 activity can increase muscle mass by up to at least
 CC 45% in cattle, pigs and poultry used for meat production, reducing the
 CC need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
 CC treat human diseases such as cancer cachexia where muscle atrophy is
 CC pronounced and for patients suffering from acute and chronic heart
 CC failure
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFVLRVPKVSASHLE 21
 DB 1 FNNFTVSFVLRVPKVSASHLE 21
 RESULT 19
 AAB85453
 ID AAB85453 standard; peptide; 21 AA.
 XX
 AC AAB85453;
 XX

DT 25-SEP-2001 (first entry)
 XX
 DE Universal tetanus toxin Th epitope TT947-967.
 XX
 KW HER 2/neu; epidermal growth factor receptor; EGFR; multispecific protein;
 KW Fc receptor; FcR; tumor cell; breast; cancer; sarcoma; carcinoma; HIV;
 KW pathogenic; Toxoplasma gondii; candidiasis; systemic lupus; cytostatic;
 KW immune thrombocytopenia purpura; immunosuppressive; antiviral;
 KW antifungal; antiprotozoal; tetanus toxin.
 XX
 OS Clostridium tetani.
 XX
 PN US6270765-B1.
 XX
 PD 07-AUG-2001.
 XX
 PF 06-NOV-1998; 98US-00188082.
 XX
 PR 07-JUN-1995; 95US-00484172.
 PR 07-JUN-1996; 96US-00661052.
 XX
 PA (MEDA-) MEDAREX INC.
 XX
 XX Deo YM, Goldstein J, Graziano R, Somasundaram C;
 PI WPI; 2001-475189/51.
 DR
 XX
 PT Inducing killing of tumor cells which expresses HER 2/neu or epidermal
 PT growth factor receptor (EGFR) by contacting the cell with multispecific
 PT proteins comprising an anti-Fc receptor, -Her 2/neu or -EGFR antibody,
 PT useful for treating cancer.
 XX
 PS Example 7; Col 29; 57pp; English.
 XX
 CC The invention relates to a new method for inducing killing of a tumor
 CC cell which expresses HER 2/neu or epidermal growth factor receptor
 CC (EGFR). The method comprises contacting the tumor cell with a
 CC multispecific protein comprising a component, preferably an antibody,
 CC which binds to an Fc receptor (FcR), Her 2/neu or EGFR. The method is
 CC useful for inducing killing of a tumor cell from breast cancer, sarcoma,
 CC carcinoma, or ovarian cancer. Specific multispecific proteins can also be
 CC administered to a subject to treat or prevent other diseases or
 CC conditions, including pathogenic infections (e.g., viral (such as HIV)),
 CC protozoan infections (such as Toxoplasma gondii), fungal infections (such
 CC as candidiasis), and an autoimmunity (e.g. immune thrombocytopenia
 CC purpura and systemic lupus). The present sequence represents an universal
 CC tetanus toxin Th epitope TT947-967
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFVLRVPKVSASHLE 21
 DB 1 FNNFTVSFVLRVPKVSASHLE 21
 RESULT 20
 AAB85702
 ID AAB85702 standard; peptide; 21 AA.
 XX
 AC AAB85702;
 XX
 DT 29-OCT-2001 (first entry)
 XX
 DE Amino acid sequence of P30 epitope.
 XX
 KW Multivalent protein; immune response; Plasmodium vivax; parasite;
 KW protozoas; vaccine; malaria; recombinant; Vivaci; ViVac2.
 XX
 OS Plasmodium vivax.

XX WO200155181-A2.
 XX 02-AUG-2001.
 XX 29-JAN-2001; 2001WO-US002937.
 XX 31-JAN-2000; 2000US-0179213P.
 XX (USSH) US DEPT HEALTH & HUMAN SERVICES.
 XX Lal AA, Xiao L, Zhou Z;
 XX WPI; 2001-514557/56.
 XX New recombinant multivalent protein comprising antigenic determinants
 PT derived from more than one stage in a life cycle of Plasmodium vivax,
 PT useful as a vaccine for treating, preventing and reducing malarial
 PT infection.
 XX Example 1; Page 25; 59pp; English.
 XX The invention relates to recombinant multivalent proteins (I) that
 CC stimulate an immune response to Plasmodium vivax. (I) comprises antigenic
 CC determinants, fragments or conservative substitutions, derived from more
 CC than one stage in a life cycle of a Plasmodium vivax parasite. (I) is
 CC useful as a vaccine for stimulating an immune response, specifically a
 CC protective immune response that confers increased resistance to infection
 CC by Plasmodium parasites, such as P. vivax. (I) is especially useful in
 CC the treatment, prevention and reduction of malarial infection, as
 CC research or diagnostic reagents for the detection of Plasmodium species
 CC in a biological sample, and for conferring immunity against multiple
 CC stages of the malarial parasite. The antibodies produced are useful for
 CC the detection or measurement of antigenic epitopes derived from one or
 CC more stages in a life cycle of a parasite, particularly P. vivax. The
 CC vaccine comprising the recombinant proteins, is cost-effective, health-
 CC promoting intervention for controlling, preventing or treating the
 CC incidence of malaria. The present sequence represents the amino acid
 CC sequence of a p30 epitope, a component of the multivalent and multistage
 CC proteins vivacp and ViVac2p
 XX Sequence 21 AA;
 SQ

Query Match 100.0%; Score 112; DB 4; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFVLRVVKVSASHLE 21
 |||||
 DB 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 21
 ABG31775
 ID ABG31775 standard; peptide; 21 AA.
 XX
 AC ABG31775;
 XX 03-DEC-2002 (first entry)
 DT
 XX T helper cell epitope #2.
 DE
 XX Immunogen; B-cell epitope; cytotoxic T lymphocyte; CTL; TH epitope;
 KW T helper cell epitope; virtual lymph node device.
 XX Clostridium tetani.
 OS
 XX WO200266056-A2.
 PN
 XX 29-AUG-2002.
 PD
 XX 19-FEB-2002; 2002WO-DK000112.
 PF
 XX

PR 19-FEB-2001; 2001WO-DK000113.
 PR 20-FEB-2001; 2001US-00785215.
 PR 20-AUG-2001; 2001DK-00001231.
 PR 22-OCT-2001; 2001US-0337543P.
 XX (PHAR-) PHARMEXA AS.
 XX Nielsen KG, Koefoed P;
 XX WPI; 2002-706932/76.
 XX Novel immunogen useful for immunizing an animal, has an activated
 PT polyhydroxypolymer backbone to which is attached an antigenic determinant
 PT including a B cell epitope and another determinant including a T-helper
 PT epitope.
 XX Example 1; Page 51; 52pp; English.
 PS The invention relates to an immunogen comprising at least one first
 XX antigenic determinant that includes at least one B-cell epitope and/or at
 CC least one cytotoxic T lymphocyte (CTL) epitope, and at least one second
 CC antigenic determinant that includes a T helper cell epitope (TH epitope),
 CC where each of the first and second antigenic determinants are coupled to,
 CC an activated polyhydroxypolymer carrier. The invention also relates to an
 CC immunogenic composition for raising an immune response against an antigen
 CC in a mammal, including a human. The immunogen or immunogenic composition
 CC contained in a virtual lymph node (VLN) device is useful for immunising
 CC an animal, including a human, against an antigen of choice, where the
 CC antigen shares at least one first antigenic determinant with the
 CC immunogen. This sequence represents a T helper cell epitope used in
 CC synthesis of an immunogen of the invention
 XX Sequence 21 AA;
 SQ

Query Match 100.0%; Score 112; DB 5; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFVLRVVKVSASHLE 21
 |||||
 DB 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 22
 AAU11415
 ID AAU11415 standard; peptide; 21 AA.
 XX
 AC AAU11415;
 XX 12-MAR-2002 (first entry)
 DT
 XX Tetanus toxoid precursor peptide, tentoxylisin, #2.
 DE
 XX Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer;
 KW Tetanus toxoid precursor peptide; tentoxylisin.
 XX Clostridium tetani.
 OS
 XX WO200195763-A2.
 PN
 XX 15-NOV-2001.
 PD
 XX 04-MAY-2001; 2001WO-US014363.
 PF
 XX 05-MAY-2000; 2000US-0202328P.
 PR
 XX (APHT-) APHTON CORP.
 PA
 XX Grimes S, Michaeli D, Stevens VC;
 PI

XX WPI; 2002-049440/06.
 XX
 PT Novel synthetic immunogen for inducing immune response against
 PT gonadotropin releasing hormone, comprises fusion peptide having
 PT promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 PT or its analog.
 XX
 XX Disclosure; Page 29; 43pp; English.
 XX
 CC The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone, LH(RH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and
 CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is Tetanus
 CC toxoid precursor peptide, tetoxylisin, a promiscuous helper T-cell
 CC peptide epitope used in the immunogen of the invention
 XX
 XX Sequence 21 AA;
 SQ
 Query Match 100.0%; Score 112; DB 5; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 23
 ABP72695
 ID ABP72695 standard; peptide; 21 AA.
 XX
 AC ABP72695;
 XX
 XX 11-JUN-2003 (first entry)
 DT
 DE Tetanus toxoid T cell epitope P30.
 XX
 XX Tetanus toxoid; epitope; amyloid precursor protein; APP; beta amyloid;
 KW vaccine; genetic immunisation; nontropic; neuroprotective;
 KW Alzheimer's disease.
 XX
 XX Clostridium tetani.
 OS
 XX WO2003015812-A2.
 PN
 XX 27-FEB-2003.
 PD
 XX 20-AUG-2002; 2002WO-DK000547.
 PF
 XX 20-AUG-2001; 2001DK-00001231.
 PR 22-OCT-2001; 2001US-0337543P.
 PR 16-APR-2002; 2002DK-00000558.
 PR 16-APR-2002; 2002US-0373027P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA
 XX Rasmussen PB, Jensen MR, Nielsen KG, Koefoed P, Degan FD;
 PI WPI; 2003-312718/30.
 XX N-PSDB; ABZ81993.
 DR
 DR Novel analog of amyloid precursor protein or beta amyloid for treating
 PT Alzheimer's disease, has amyloid precursor protein/beta amyloid
 PT incorporating B-cell epitope of amyloid protein and foreign T-helper
 PT epitope.

XX Disclosure; Page 120; 122pp; English.
 XX
 CC The present sequence is the protein sequence of tetanus toxoid T-cell
 CC epitope P30. The invention provides methods for compositions for
 CC combatting diseases characterised by deposition of amyloid, such as
 CC Alzheimer's disease. Immunisation is preferably effected by
 CC administration of analogues of autologous amyloid precursor protein (APP)
 CC or beta amyloid (Abeta), the analogues being capable of inducing antibody
 CC production against the autologous amyloidogenic polypeptides. Especially
 CC preferred as an immunogen is autologous Abeta which has been modified by
 CC introduction of one or a few foreign, immunodominant and promiscuous T-
 CC cell epitopes, such as tetanus toxoid P30 epitope. Genetic immunisation
 CC against APP or Abeta and vaccination using live vaccines are also
 CC provided
 XX
 XX Sequence 21 AA;
 SQ
 Query Match 100.0%; Score 112; DB 6; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 RESULT 24
 ADA25170
 ID ADA25170 standard; peptide; 21 AA.
 XX
 AC ADA25170;
 XX
 XX 20-NOV-2003 (first entry)
 DT
 DE C. tetani T-cell epitope #4.
 XX
 KW fimbrin; non-typable Haemophilus influenzae; NTHi infection;
 KW otitis media; epitope; immunogenic.
 XX
 OS Clostridium tetani.
 XX
 XX US6436405-B1.
 PN
 XX 20-AUG-2002.
 PD
 XX 04-SEP-1998; 98US-00148711.
 PF
 XX 02-JUN-1995; 95US-00460502.
 PR
 XX (OHIS) UNIV OHIO STATE.
 PA
 XX Bakaletz LO, Kaumaya PTP;
 PI WPI; 2003-615247/58.
 XX
 XX Synthetic chimeric fimbrin peptide, useful for treating Haemophilus
 PT influenzae infections.
 PT
 XX Claim 6; Col 4; 16pp; English.
 XX
 CC The invention relates to a synthetic chimeric fimbrin peptide. The
 CC peptide is useful for treating a non-typable Haemophilus influenzae
 CC (NTHi) infection and otitis media. The synthetic peptides do not require
 CC tedious purification techniques. The present sequence represents the
 CC amino acid sequence of a Clostridium tetani T-cell epitope #4.
 XX
 XX Sequence 21 AA;
 SQ
 Query Match 100.0%; Score 112; DB 6; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVPKVSASHLE 21
 Db 1 FNNFTVSFVLRVPKVSASHLE 21

RESULT 25

AAO30455
 ID AAO30455 standard; peptide; 21 AA.

XX AAO30455;

XX 22-SEP-2003 (first entry)

DE Tetanus toxoid epitope (P30) peptide.

KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; epitope;
 KW tetanus toxoid.

XX Unidentified.

OS WO2003042244-A2.

PN 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

PR 16-NOV-2001; 2001DK-00001702.

PR 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.

PA (NIEL/) NIELSEN F S.

PA (BRAT/) BRATT T.

PA (VOLD/) VOLDORGB B.

PA (MOUR/) MOURITSEN S.

XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;

DR WPI; 2003-449558/42.

DR N-P5DB; AAL61291.

PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

PS Example 2; Page 107; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a tetanus toxoid epitope peptide.
 CC This sequence is used to illustrate the method of the invention

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 6; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVPKVSASHLE 21

Db 1 FNNFTVSFVLRVPKVSASHLE 21

RESULT 26

ABR82483

ID ABR82483 standard; peptide; 21 AA.

XX ABR82483;

XX 20-NOV-2003 (first entry)

XX Tetanus toxoid P30 epitope sequence.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; tetanus toxoid; p2; p30; antigen.

XX Clostridium tetani.

OS WO2003059379-A2.

PN 24-JUL-2003.

PD 17-JAN-2003; 2003WO-DK000031.

PR 17-JAN-2002; 2002DK-00000082.

PR 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysner S, Voldborg B;

XX WPI; 2003-587260/55.

XX Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.

XX Disclosure; Page 140; 140pp; English.

XX The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a tetanus toxoid (TT)
 CC P30 epitope that can be introduced into a CEA polypeptide sequence

XX Sequence 21 AA;

Query Match 100.0%; Score 112; DB 7; Length 21;

Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVPKVSASHLE 21

Db 1 FNNFTVSFVLRVPKVSASHLE 21

RESULT 27

ADC09977

ID ADC09977 standard; peptide; 21 AA.

XX ADC09977;

XX 18-DEC-2003 (first entry)

DE Tetanus toxoid TT947-967, universal T-cell epitope.

XX BCG; T-cell; epitope; gastrointestinal; antiulcer.

XX Clostridium tetani.

OS WO2003072040-A2..

PN 04-SEP-2003.

XX 25-FEB-2003; 2003WO-US005421.

PR 25-FEB-2002; 2002US-0360134P.

PR 23-APR-2002; 2002US-0374501P.
 XX (ELAN-) ELAN PHARM INC.
 XX Taylor J, Yednock TA;
 XX WPI; 2003-712654/67.
 XX Preventing and/or reducing pathological inflammation by administration of
 PT an agent inhibiting alpha-4 integrin or its dimer, useful in treating
 PT multiple sclerosis, Crohn's disease, ulcerative colitis or inflammatory
 PT bowel disease.
 XX Disclosure; Page 17; 89pp; English.
 XX The present sequence is that of a universal T-cell epitope comprising
 CC amino acids 947-967 of tetanus toxoid. Universal T-cell epitopes such as
 CC this can be used as carriers of peptide agents of the invention that bind
 CC alpha-4 integrin or a dimer comprising an alpha-4 integrin subunit.
 CC Linkage to a carrier will improve the immune response to a peptide that
 CC may be too small to be immunogenic on its own. A method of chronically
 CC reducing a patient's pathological inflammation involves administration of
 CC an agent that specifically binds to an alpha-4 integrin or a dimer
 CC comprising alpha-4 integrin. The agent is administered chronically for at
 CC least 6 months, preferably at least 12 months. The administration
 CC maintains alpha-4 integrin receptor saturation to chronically suppress
 CC pathological inflammation in the patient. The pathological inflammation
 CC is caused by inflammatory disease of the gastrointestinal tract, such as
 CC Crohn's disease, ulcerative colitis or inflammatory bowel disease, or is
 CC caused by multiple sclerosis (all claimed).
 XX Sequence 21 AA;
 SQ

Query Match 100.0%; Score 112; DB 7; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

RESULT 28
 ADC89659
 ID ADC89659 standard; peptide; 21 AA.
 XX
 AC ADC89659;
 XX
 DT 01-JAN-2004 (first entry)
 XX
 DE C. tetani T cell epitope #4.
 XX
 KW Fimbrin; T cell epitope; vaccine; otitis media; auditory;
 KW antiinflammatory.
 XX
 OS Clostridium tetani.
 XX
 PN US2003113344-A1.
 XX
 PD 19-JUN-2003.
 XX
 PF 19-AUG-2002; 2002US-00223711.
 XX
 PR 04-SEP-1998; 98US-00148711.
 XX
 PA (BAKA/) BAKALETZ L O.
 PA (KAUM/) KAUMAYA P T P.
 XX
 PI Bakaletz LO, Kaumaya PTP;
 XX
 DR WPI; 2003-810881/76.
 XX
 PT Novel synthetic chimeric fimbrin peptide LB1 or LB2 comprising a first

PT peptide unit, T cell epitope as second peptide unit and third linker
 PT peptide unit, useful for preventing or reducing severity of otitis media.
 XX
 PS Claim 10; SEQ ID NO 8; 15pp; English.
 XX
 CC The invention relates to a synthetic chimaeric fimbrin peptide LB1 or LB2
 CC comprises a first peptide unit derived from H. influenzae fimbrin, a
 CC second peptide unit containing a T cell epitope and a third linker
 CC peptide which connects the first peptide to the second. The chimaeric
 CC peptide is useful for inducing an immune response in animals against non-
 CC typable Haemophilus influenzae (NTHi) and for preventing or reducing
 CC adherence of NTHi to host cells thereby preventing or reducing the
 CC severity of otitis media. The present sequence is a clostridium tetani T
 CC cell epitope for use in the chimaeric peptides of the invention.
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 7; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||

RESULT 29
 ADC81610
 ID ADC81610 standard; peptide; 21 AA.
 XX
 AC ADC81610;
 XX
 DT 01-JAN-2004 (first entry)
 XX
 DE Tetanus toxoid P30 epitope SEQ ID NO:3.
 XX
 KW pain reduction; nociceptive; nociceptor; immune response;
 KW tumour necrosis factor alpha; TNFalpha; analgesic; vaccine; pain;
 KW neuropathic pain; tetanus toxoid; epitope.
 XX
 OS Synthetic.
 OS Clostridium tetani.
 XX
 PN WO2003075951-A2.
 XX
 PD 18-SEP-2003.
 XX
 PF 11-MAR-2003; 2003WO-DK000147.
 XX
 PR 11-MAR-2002; 2002DK-00000368.
 PR 11-MAR-2002; 2002US-0363128P.
 XX
 PA (PHAR-) PHARMEXA AS.
 XX
 PI Pedersen HR, Ebert B, Pedersen LH, Rasmussen PB;
 XX
 DR WPI; 2003-748335/70.
 XX
 PT Reducing pain or increasing the threshold for nociception in an
 PT individual comprises administering an agent capable of inducing an active
 PT immune response that targets the individual's autologous tumor necrosis
 PT factor alpha.
 XX
 PS Disclosure; SEQ ID NO 3; 120pp; English.
 XX
 CC The present invention describes a method for reducing pain or increasing
 CC the threshold for nociception in an individual comprising administering
 CC an agent capable of inducing an active immune response that targets the
 CC individual's autologous tumor necrosis factor alpha (TNFalpha). The
 CC agent has analgesic activity, and can be used in a vaccine against
 CC autologous TNFalpha. The method is useful in reducing pain or increasing
 CC the threshold for nociception in an individual. The method is especially
 CC intended for reducing neuropathic pain. The present sequence represents a

CC tetanus toxoid P30 epitope, which is given in the exemplification of the
CC present invention.
XX
SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 7; Length 21;
Best Local Similarity 100.0%; Pred. No. 7.8e-12;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPRKVSASHLE 21
|||||

Db 1 FNNFTVSFWLRVPRKVSASHLE 21
|||||

RESULT 30

ADD71439

ID ADD71439 standard; peptide; 21 AA.

XX

AC ADD71439;

XX

DT 15-JAN-2004 (first entry)

XX

DE HLA-DP4 binding peptide ligand #1.

XX

KW cytostatic; immunostimulant; immunosuppressive; neuroprotective;

KW antidiabetic; anti-allergic; ligand; HLA-DP4; human leukocyte antigen;

KW immunomodulator; vaccine; pathogen; tumor cell; multiple sclerosis;

KW diabetes; allergy; graft rejection.

XX

OS Synthetic.

XX

PN FR2830940-A1.

XX

PD 18-APR-2003.

XX

PF 17-OCT-2001; 2001FR-00013352.

XX

PR 17-OCT-2001; 2001FR-00013352.

XX

PA (COMS) COMMISSARIAT ENERGIE ATOMIQUE.

PA (SEDA-) SEDAC THERAPEUTICS SOC ETUD DEV ANTIGENE.

XX

PI Mallere B, Castelli F, Buhot C, Georges B;

XX

DR WPI; 2003-395920/38.

XX

PT Process for selecting ligands for human leukocyte antigen DP4, useful as

PT immunomodulators for treating e.g. tumors, based on inhibition of

PT binding.

XX

PS Claim 5; SEQ ID NO 1; 70pp; French.

XX

CC The invention relates to a process for selecting ligands (A) of HLA

CC (human leukocyte antigen)-DP4 comprising: (a) incubating purified DP4

CC with a labelled peptide (I) in presence of different concentrations of

CC test compounds; (b) separating complexes formed; (c) determining DP4-(I)

CC complexes by measuring a signal from the label; and (d) selecting the

CC compounds having binding IC50 less than 1000 nM, corresponding to the

CC concentration required to inhibit 50 % binding of (I). (I) has signal-to-

CC noise ratio over 5, at 10 nM, in a direct binding test to DP4. (A) cause

CC activation of T cells, or their anergy. (A), or nucleic acid that encodes

CC them, are useful as immunomodulators, including uses in vaccines against

CC pathogens and tumor cells, also for treating autoimmune diseases

CC (multiple sclerosis and type I diabetes), allergy and graft rejection.

CC (A) are useful as reagents for diagnosing the immune status of an

CC individual, while labelled complexes of DP4 with (A) are used to select

CC antigen-specific CD4+ T cells. The method identifies ligands specific for

CC HLA-DP4 and allows exact definition of the binding motif shared by DP4

CC binding ligands. This sequence represents an example of a peptide ligand

CC of the invention. The peptides are labelled (biotinylated) at their N-

CC termini.

XX

SQ Sequence 21 AA;

Query Match

Best Local Similarity 100.0%; Score 112; DB 7; Length 21;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPRKVSASHLE 21
|||||

Db 1 FNNFTVSFWLRVPRKVSASHLE 21
|||||

RESULT 31

AAO24396

ID AAO24396 standard; peptide; 21 AA.

XX

AC AAO24396;

XX

DT 06-MAY-2004 (first entry)

XX

DE HLA-A24-restricted cancer antigen peptide related peptide #31.

XX

KW Human; mouse; HLA-A24-restricted cancer antigen; antigen; cancer;

KW tumour suppressor protein; cytostatic; WT1; vaccine.

XX

OS Synthetic.

XX

PN WO2003106682-A1.

XX

PD 24-DEC-2003.

XX

PF 12-JUN-2003; 2003WO-JP007463.

XX

PR 12-JUN-2002; 2002JP-00171518.

XX

PR 20-SEP-2002; 2002JP-00275572.

XX

PA (CHUS) CHUGAI SEIYAKU KK.

PA (SUMU) SUMITOMO PHARM CO LTD.

XX

PA (SUGI) SUGIYAMA H.

XX

PI Sugiyama H, Gotoh M, Takasu H;

XX

DR WPI; 2004-090846/09.

XX

PT Antigenic peptides derived from WT1 which induce HLA-A24 restricted

PT cytotoxic T-lymphocytes for production of cancer vaccine and treatment

PT and prevention of cancer.

XX

PS Example 1; Page 88; 0pp; Japanese.

XX

CC The present invention relates to antigenic peptides derived from tumour

CC suppressor protein WT1 which induce HLA-A24 restricted cytotoxic T-

CC lymphocytes. The peptides can be used in the preparation of cancer

CC vaccine for treatment and prevention of cancer, including leukaemia,

CC multiple myeloma, lymphoma, and cancer of the stomach, colon, breast,

CC liver, ovary, skin, pancreas, prostate and womb. The present sequence is

CC a polypeptide used in the exemplification of the invention

XX

SQ Sequence 21 AA;

Query Match

Best Local Similarity 100.0%; Score 112; DB 8; Length 21;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPRKVSASHLE 21
|||||

Db 1 FNNFTVSFWLRVPRKVSASHLE 21
|||||

RESULT 32

ADL64022

ID ADL64022 standard; peptide; 21 AA.

XX

AC ADL64022;

XX

03-JUN-2004 (first entry)
Tetanus toxin P30 peptide T-cell epitope.
immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
AHR; mucus hyper-secretion; goblet cell metaplasia;
sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
dermatological; antiasthmatic; gene therapy;
chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
P30.
Clostridium tetani.
WO2004019974-A2.
11-MAR-2004.
28-AUG-2003; 2003WO-GB003703.
30-AUG-2002; 2002GB-00020212.
28-FEB-2003; 2003GB-00004672.
(GLAX) GLAXO GROUP LTD.
(ASHM/) ASHMAN C.
Ashman C, Ellis JH;
WPT; 2004-239121/22.
New immunogenic composition comprising an interleukin-13 (IL-13) element
that drives an immune response recognizing human IL-13 and foreign T-cell
epitopes, useful in treating, e.g. asthma or atopic dermatitis.
Disclosure; Page 13; 89pp; English.
This invention relates to a novel immunogenic composition comprising an
IL-13 (interleukin-13) element that is capable of driving an immune
response by recognising human IL-13 and one or more foreign T-cell
epitopes. Specifically, it refers to a method for producing a human
chimeric IL-13 immunogen formulated in an appropriate manner to generate
a human vaccine. The present invention describes human chimeric IL-13
sequences as having a similar conformational shape to native human IL-13
while having sufficient amino acid sequence diversity, attributable to
non-human mammalian species, to enhance its immunogenicity. Accordingly,
the method results in a reduction in airway hyper-responsiveness (AHR),
mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
the airways and skin irritation, as well as reducing the requirement for
inhaled corticosteroids (ICS). As such, these compositions, which exhibit
dermatological and antiasthmatic activities, can be used via gene therapy
to treat individuals suffering from or susceptible to chronic obstructive
pulmonary disease (COPD), asthma or atopic dermatitis. This peptide
sequence is a T-cell peptide epitope fused to IL-13 to create an
immunogen of the invention.

DE XX Tetanus toxin P30 peptide T-cell epitope.
KW immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
KW AHR; mucus hyper-secretion; goblet cell metaplasia;
KW sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
KW dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW P30.
OS Clostridium tetani.
XX WO2004019975-A2.
XX 11-MAR-2004.
XX 28-AUG-2003; 2003WO-GB003729.
XX 30-AUG-2002; 2002GB-00020211.
XX 28-FEB-2003; 2003GB-00004672.
XX (GLAX) GLAXO GROUP LTD.
XX Ellis JH, Ashman C;
XX WPI; 2004-239122/22.
XX New vaccine composition useful for treating asthma, Chronic obstructive
XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
XX immunogen generating an immune response against interleukin-13.
XX Disclosure; Page 14; 89pp; English.
XX This invention relates to a novel immunogenic composition comprising an
XX IL-13 (interleukin-13) element that is capable of driving an immune
XX response by recognising human IL-13 and one or more foreign T-cell
XX epitopes. Specifically, it refers to a method for producing a human
XX chimeric IL-13 immunogen formulated in an appropriate manner to generate
XX a human vaccine. The present invention describes human chimeric IL-13
XX sequences as having a similar conformational shape to native human IL-13
XX while having sufficient amino acid sequence diversity, attributable to
XX non-human mammalian species, to enhance its immunogenicity. Accordingly,
XX the method results in a reduction in airway hyper-responsiveness (AHR),
XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
XX the airways and skin irritation, as well as reducing the requirement for
XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit
XX dermatological and antiasthmatic activities, can be used via gene therapy
XX to treat individuals suffering from or susceptible to chronic obstructive
XX pulmonary disease (COPD), asthma or atopic dermatitis. This peptide
XX sequence is a T-cell peptide epitope fused to IL-13 to create an
XX immunogen of the invention.
XX SQ Sequence 21 AA;
Query Match 100.0%; Score 112; DB 8; Length 21;
Best Local Similarity 100.0%; Pred. No. 7.8e-12; Mismatches 0; Indels 0; Gaps 0;
Matches 21; Conservative 0;
QY 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | | |
DB 1 FNNFTVSFWLRVPKVSASHLE 21
| | | | | | | | | | | | | | | | | | | | |
RESULT 34
ADL97909
ID ADL97909 standard; peptide; 21 AA.
XX
AC ADL97909;
XX
DT 03-JUN-2004 (first entry)
XX
DE Tetanus toxin P30 T-cell epitope, SEQ ID NO:34.
XX Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; eaponin;
KW

KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; antiallergic; dermatological; T-helper epitope;
 KW tetanus toxin; P30.
 XX Clostridium tetani.
 OS WO2004019979-A2.
 PN 11-MAR-2004.
 PD 28-AUG-2003; 2003WO-GB003721.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 PA (GLAXO) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 PI WPI; 2004-239126/22.
 DR Vaccine composition useful for treating asthma, Chronic Obstructive
 PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises
 PT immunogen generating an immune response against interleukin-13.
 XX Disclosure; SEQ ID NO 34; 45pp; English.
 XX The invention relates to a vaccine composition for treating asthma or
 CC COPD (chronic obstructive pulmonary disease). The vaccine composition
 CC comprises an immunogen that is capable of generating an immune response
 CC against self interleukin-13 (IL-13) and an adjuvant composition
 CC comprising a combination of an immunostimulatory oligonucleotide
 CC containing at least one unmethylated CG motif and a saponin. The IL-13
 CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
 CC epitopes, or is a non-human IL-13 backbone substituted with human IL-13
 CC epitopes. The vaccine composition is useful for treating asthma or COPD,
 CC or atopic disorders such as hayfever, contact allergies or dermatitis.
 CC The present sequence represents a heterologous T-cell epitope which may
 CC be incorporated into an IL-13 immunogen of the invention.
 XX Sequence 21 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSWLRVPRKVSASHLE 21
 Db 1 FNNFTVSWLRVPRKVSASHLE 21
 RESULT 35
 ADM06895
 ID ADM06895 standard; protein; 21 AA.
 XX ADM06895;
 AC 17-JUN-2004 (first entry)
 DT Tetanus toxin P30 epitope, SEQ ID NO:8.
 DE Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnery; vaccine; tetanus toxin; P30 epitope;
 KW T-cell epitope.
 XX Clostridium tetani.
 OS WO2004024183-A1.
 XX 01-APR-2004.

PD 25-MAR-2004.
 XX 12-SEP-2003; 2003WO-DK000592.
 PF 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX (PHAR-) PHARMEXA AS.
 PA Boving TEG, Klyser S;
 PI WPI; 2004-329403/30.
 DR Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX Example 2; SEQ ID NO 8; 83pp; English.
 XX The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting a
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the
 CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
 CC related cancers. The present sequence represents the tetanus toxin P30
 CC epitope, a promiscuous T-cell epitope, which may be used in ghrelin
 CC analogues of the invention.
 XX Sequence 21 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSWLRVPRKVSASHLE 21
 Db 1 FNNFTVSWLRVPRKVSASHLE 21
 RESULT 36
 ADO43876
 ID ADO43876 standard; peptide; 21 AA.
 XX ADO43876;
 AC 15-JUL-2004 (first entry)
 DT Amino acid sequence of synthetic peptide #1.
 DE Human; WPI; CTL induction; cancer vaccine; stomach cancer;
 KW prostate cancer; ovarian cancer.
 XX Synthetic.
 OS WO2004026897-A1.
 PN 01-APR-2004.

PF 19-SEP-2003; 2003WO-JP011974.
 PR 20-SEP-2002; 2002JP-00275264.
 XX (CHUS) CHUGAI SEIYAKU KK.
 PA (SUMU) SUMITOMO PHARM CO LTD.
 PA (SUGI/) SUGIYAMA H.
 XX
 PI Sugiyama H, Gotoh M, Takasu H, Samizo F, Kusunose N, Nakatsuka M;
 XX WPI; 2004-295379/27.
 DR
 XX Novel WT1 substitution peptides with cysteine replaced by specific amino
 PT acid residue and their encoded polynucleotide for cancer vaccines with
 PT CTL induction activity for treatment of e.g. stomach cancer and prostate
 PT cancer.
 XX
 PS Disclosure; Page 18; 65pp; Japanese.
 XX
 CC The specification describes WT1 substitution peptides, in which a
 CC cysteine residue is substituted with another amino acid residue. The WT1
 CC substitution peptides have CTL induction activity. Peptides of the
 CC invention are used in cancer vaccines, which are applicable in the
 CC treatment of e.g. stomach cancer, prostate cancer and ovarian cancer. The
 CC present peptide represents a peptide that is mentioned in the
 CC specification.
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVVKVSASHLE 21
 DB 1 FNNFTVSFWLRVVKVSASHLE 21
 RESULT 37
 ADP02877
 ID ADP02877 standard; peptide; 21 AA.
 XX
 AC ADP02877;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 947-967.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.

XX Disclosure; SEQ ID NO 10; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to amino acids 947-967
 CC of the tetanus toxoid protein used in the method of the invention.
 XX
 SQ Sequence 21 AA;
 Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVVKVSASHLE 21
 DB 1 FNNFTVSFWLRVVKVSASHLE 21
 RESULT 38
 ADP02884
 ID ADP02884 standard; peptide; 21 AA.
 XX
 AC ADP02884;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Tetanus toxoid amino acids 947-967 for fusion protein.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 17; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response

CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to the tetanus toxoid
 CC peptide corresponding to amino acid 947-967 used in the method of the
 CC invention.

XX SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 39
 ADO24821

ID ADO24821 standard; peptide; 21 AA.

XX AC ADO24821;

XX DT 12-AUG-2004 (first entry)

XX DE Tetanus toxoid peptide #2 for carbohydrate dendrimer conjugate.

XX KW antibacterial; virucide; fungicide; hepatotropic; anti-HIV; cytostatic;
 XX vaccine; bacterial adhesion inhibitor; toxin action inhibitor;
 XX carbohydrate dendrimer; immunomodulating substance; HIV; hepatitis;
 XX influenza; fungal disease; cancer; carcinoma; melanoma; poliovirus.

XX OS Clostridium tetani.

XX FN WO2004041310-A1.

XX PD 21-MAY-2004.

XX PF 07-NOV-2003; 2003WO-DK000766.

XX PR 08-NOV-2002; 2002DK-00001724.

XX PA (DAFO-) DANMARKS FODEVARE OG VETERINAERFORSKNING.

XX PI Heegaard P, Boas U;

XX DR WPI; 2004-419632/39.

XX PT Synthesizing chemoselectively carbohydrate dendrimer conjugate having
 PT carbohydrate residue and immunomodulating substance, by identifying
 PT chemoselective and carbohydrate residue, and binding residues to
 PT dendrimer.

XX PS Disclosure; Page 20; 81pp; English.

XX CC The invention relates to a method of synthesizing chemoselectively a
 CC carbohydrate dendrimer (CD) conjugate having a specific structure
 CC containing a functional dendrimer, a residue of a carbohydrate, and a
 CC residue of an immunomodulating substance. (CD) is useful in the
 CC inhibition of antibodies, as a targeting compound, in medicine, in
 CC production of bacterial adhesion, inhibition of toxin action such as e.g.
 CC glycosphingolipid-specific VT2 toxins and other such bacterial toxins
 CC with binding activities toward cell-surface carbohydrates of the host, or
 CC inhibition of carbohydrate-mediated virus entry into host cells, in
 CC diagnostic assays, in assays for the detection of antibodies against E,
 CC and in high-throughput screening. (CD) are useful for treating and/or
 CC preventing bacterial diseases such as e.g. infection with bacteria, viral
 CC diseases such as infection with HIV, hepatitis or influenza, fungal
 CC diseases and certain types of cancer such as carcinomas or melanomas. The
 CC method enables fast and efficient synthesis of dendrimer conjugates
 CC having a well-defined chemical structure. This sequence corresponds to a

CC tetanus toxoid peptide sequence used in the method of the invention.
 XX SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 40
 ADP04308

ID ADP04308 standard; peptide; 21 AA.

XX AC ADP04308;

XX DT 09-SEP-2004 (first entry)

XX DE Tetanus toxoid p30 peptide SEQ ID NO:1.

XX KW T-cell; antigen; antigen presenting cell; APC; CD4+; CD8+; virucide;
 XX antibacterial; protozoacide; cytostatic; cell therapy; tetanus toxoid;
 XX p30.

XX OS Synthetic.

XX FN WO2004053113-A1.

XX PD 24-JUN-2004.

XX PF 09-DEC-2003; 2003WO-AU001647.

XX PR 09-DEC-2002; 2002AU-00953238.

XX PA (ORDE-) ORDER OF SISTERS OF MERCY IN QUEENSLAND.

XX PI Hart DNJ, Turtle CJ;

XX DR WPI; 2004-468864/44.

XX PT Generating a population of T-cells specific for an antigen comprises co-
 PT incubating the substantially mature APC population with a population of
 PT CD4+ T-cells, a population of CD8+ T-cells and a target antigen.

XX PS Example 1; SEQ ID NO 1; 50pp; English.

XX CC The invention relates to a novel method of generating a population of T-
 CC cells specific for an antigen comprising isolating a population of
 CC substantially mature antigen presenting cells (APC), co-incubating the
 CC substantially mature APC population with a population of CD4+ T-cells, a
 CC population of CD8+ T-cells and a target antigen for a time and under
 CC conditions sufficient to generate CD8+ T-cells specific for the antigen.
 CC The method of the invention has virucide, antibacterial, protozoacide,
 CC and cytostatic activity, and may have a use in cell therapy. The present
 CC sequence represents tetanus toxoid p30 peptide (tt947-967).

XX SQ Sequence 21 AA;

Query Match 100.0%; Score 112; DB 8; Length 21;
 Best Local Similarity 100.0%; Pred. No. 7.8e-12;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 41
 ADP48562

ID ADP48562 standard; peptide; 21 AA.

```

XX AC ADP48562;
XX DT
XX DE
XX DE 09-SEP-2004 (first entry)
XX KW Promiscuous T-H tetanus toxoid epitope peptide, P30.
XX KW chimeric binding protein; immunogenic; B-cell epitope;
XX KW scaffold protein structure; major histocompatibility complex; MHC;
XX KW Class II; cytostatic; vaccine; cancer; promiscuous; tetanus toxoid;
XX KW epitope.
XX OS Clostridium tetani.
XX PN WO2004052930-A2.
XX PD
XX PD 24-JUN-2004.
XX PF
XX PF 11-DEC-2003; 2003WO-DK000859.
XX PR
XX PR 11-DEC-2002; 2002DK-00001893.
XX PR 11-DEC-2002; 2002US-0432532P.
XX PR 12-FEB-2003; 2003DK-00000198.
XX PR 12-FEB-2003; 2003US-0446707P.
XX XX
XX PA (PHAR-) PHARMEXA AS.
XX PI
XX PI Mouritsen S;
XX DR WPI; 2004-468817/44.
XX XX
XX PT New chimeric binding protein comprising a B-cell epitope, a scaffold
XX PT protein structure and a tolerance breaking amino acid sequence, useful in
XX PT preparing a vaccine against e.g. cancer.
XX XX
XX PS Disclosure; SEQ ID NO 2; 61pp; English.
XX CC
XX CC The invention relates to a novel chimeric binding protein that is
XX CC immunogenic in an animal. The chimeric binding protein binds specifically
XX CC to a first receptor that binds a second receptor present in an antigen of
XX CC the animal, where the chimeric binding protein has: a B-cell epitope in
XX CC the form of a binding site; a scaffold protein structure, autologous in
XX CC the mammal, that stabilizes the 3D conformation of the binding site; and
XX CC at least one tolerance breaking amino acid sequence, which is
XX CC heterologous in the animal and which binds to a major histocompatibility
XX CC complex (MHC) Class II molecule in the animal. The invention further
XX CC comprises: a nucleic acid fragment that encodes the chimeric binding
XX CC protein; a vector carrying the nucleic acid fragment; a transformed cell
XX CC carrying an antigen in the autologous host comprising the chimeric binding
XX CC protein, nucleic acid fragment and a carrier, and down-regulating a self-
XX CC antigen or a cell that displays epitopes of the self-antigen in an
XX CC animal. The chimeric binding protein has cytostatic activity. The
XX CC chimeric binding protein is useful in preparing a vaccine against e.g.
XX CC cancer. This sequence represents a 'promiscuous' T-H tetanus toxoid
XX CC epitope peptide for use in the vaccine of the invention.
XX XX
XX SQ Sequence 21 AA;
XX
XX Query Match 100.0%; Score 112; DB 8; Length 21;
XX Best Local Similarity 100.0%; Pred. No. 7.8e-12;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 1 FNNFTVSFWLRVPKVSASHLE 21
XX
XX RESULT 42
XX ADP90538
XX ID ADP90538 standard; peptide; 21 AA.
XX XX
XX AC ADP90538;

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XX DT
XX DE
XX DE 23-SEP-2004 (first entry)
XX KW Tetanus toxin helper peptide SeqID 7.
XX KW SYT-SSX; SS393; tumour antigen peptide; cancer vaccine;
XX KW cytotoxic lymphocyte induction; synovial sarcoma; tumour; cytostatic;
XX KW helper peptide.
XX OS Clostridium tetani.
XX PN JP2004180566-A.
XX PD
XX PD 02-JUL-2004.
XX PF
XX PF 03-DEC-2002; 2002JP-00350633.
XX PR
XX PR 03-DEC-2002; 2002JP-00350633.
XX PA (SATO/) SATO N.
XX PA (SUMU) SUMITOMO SEIYAKU KK.
XX XX
XX DR WPI; 2004-472266/45.
XX XX
XX PT Novel mutant peptide of SYT-SSX origin, useful as pharmaceutical
XX PT composition of cancer vaccine for inducing cytotoxic T cells, and as
XX PT diagnostic of tumor.
XX PS Disclosure; SEQ ID NO 7; 28pp; Japanese.
XX CC
XX CC This invention relates to novel mutant peptides derived from SYT-SSX.
XX CC Specifically, it refers to a peptide SS393, which is a modified tumour
XX CC antigen peptide that can be used as the active ingredient in a cancer
XX CC vaccine. The present invention describes the development of mutant
XX CC peptides that exhibit increased binding affinity to the HLA-A24 antigen,
XX CC and as such have a favourable cytotoxic lymphocyte (CTL) induction
XX CC activity. Accordingly, these peptide epitopes can be used to treat
XX CC patients suffering from various tumours including synovial sarcoma, and
XX CC furthermore they exhibit cytostatic activities. This peptide sequence is
XX CC a helper peptide derived from the tetanus toxin, given in an
XX CC exemplification of the invention.
XX SQ Sequence 21 AA;
XX
XX Query Match 100.0%; Score 112; DB 8; Length 21;
XX Best Local Similarity 100.0%; Pred. No. 7.8e-12;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 1 FNNFTVSFWLRVPKVSASHLE 21
XX
XX RESULT 43
XX AAB46176
XX ID AAB46176 standard; peptide; 28 AA.
XX XX
XX AC AAB46176;
XX DT
XX DT 04-APR-2001 (first entry)
XX DE Tetanus toxoid 947-967 epitope AN90550.
XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
XX KW FC receptor mediated phagocytosis; immunogenic response; neuroprotective;
XX KW amyloid precursor protein; Alzheimer's disease.
XX OS Clostridium tetani.
XX PN WO200072880-A2.
XX PD
XX PD 07-DEC-2000.

```

PF 26-MAY-2000; 200WO-US014810.
 PR 28-MAY-1999; 99US-00322289.
 XX (NEUR-) NEURALAB LTD.
 XX Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX WPI; 2001-032104/04.
 XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 XX Disclosure; Page 31; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 XX Sequence 28 AA;
 SQ Query Match 100.0%; Score 112; DB 4; Length 28;
 Best Local Similarity 100.0%; Pred. No. 1.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db |||||||||||||||||||
 8 FNNFTVSFWLRVPKVSASHLE 28

RESULT 44
 ADP02901
 ID ADP02901 standard; peptide; 28 AA.
 XX
 AC ADP02901;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #13 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW Parkinson's disease.
 XX
 OS Synthetic.
 OS
 XX WO2004041067-A2.
 XX
 XX 21-MAY-2004.
 XX
 XX 31-OCT-2003; 2003WO-US034527.
 XX
 XX 01-NOV-2002; 2002US-0423012P.
 XX
 XX (ELAN-) ELAN PHARM INC.
 XX (REGC) UNIV CALIFORNIA.
 XX
 XX Schenk DB, Masliah E;
 XX WPI; 2004-411388/38.
 XX
 XX Preventing or treating disease such as Parkinson's disease characterized

PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 XX beta-amyloid.
 XX
 XX Disclosure; SEQ ID NO 34; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 XX Sequence 28 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 28;
 Best Local Similarity 100.0%; Pred. No. 1.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db |||||||||||||||||||
 8 FNNFTVSFWLRVPKVSASHLE 28

RESULT 45
 AAY92653
 ID AAY92653 standard; peptide; 31 AA.
 XX
 AC AAY92653;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE PSMpep010 - P30 inserted in hPSM insertion position 6.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 OS Synthetic.
 OS Homo sapiens.
 XX
 XX Key Location/Qualifiers
 XX Peptide 6..26
 XX /label= P30
 XX
 XX WO2000020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 XX 20-OCT-1998; 98US-0105011P.
 XX
 XX (WEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 XX Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.
 XX
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page 117; 220pp; English.
 XX

CC AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 XX

SQ Sequence 31 AA;

Query Match 100.0%; Score 112; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. No. 1.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 6 FNNFTVSFWLRVPKVSASHLE 26

RESULT 46
 AAY92654
 ID AAY92654 standard; peptide; 31 AA.
 XX
 AC AAY92654;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE PSMpep011 - P30 inserted in hPSM insertion position 8.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 OS Synthetic.
 OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..26
 FT /label= P30
 FT
 XX WO200020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 XX 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 XX
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page 117; 220pp; English.
 XX

CC AAY92650-55 are peptides designed which correspond to the P2 and P30
 CC epitopes with 5 flanking human prostate specific membrane antigen (hPSM)
 CC amino acids in each end. The flanking amino acids correspond to the
 CC epitope insertion sites 6, 8 and 10. The peptides will be used in, e.g. T
 CC cell proliferation assays, but also for ELISA or other in vitro assays.
 CC The claims detail a method for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (i.e. self-proteins), for example, hPSM,
 CC heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method
 CC comprises effecting simultaneous presentation by antigen producing cells
 CC (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-
 CC lymphocyte) group derived from the PA and/or at least 1 B-cell group
 CC derived from the cell-associated PA; and (2) at least 1 first T helper
 CC cell group which is foreign to the animal. Analogues of human PSM, human
 CC Her2 and human/murine FGF8b comprising a substantial part of all known
 CC and predicted CTL and B-cell epitopes of the respective PA and including
 CC at least one foreign T helper epitope (e.g. P2 and/or P30) are also
 CC claimed. The method is used to treat prostate, prostate/breast or breast
 CC cancer when the PA is human PSM, FGF8b and Her2, respectively
 XX
 XX

SQ Sequence 31 AA;

Query Match 100.0%; Score 112; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. No. 1.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 6 FNNFTVSFWLRVPKVSASHLE 26

RESULT 47
 AAY92655
 ID AAY92655 standard; peptide; 31 AA.
 XX
 AC AAY92655;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE PSMpep012 - P30 inserted in hPSM insertion position 10.
 XX
 KW Foreign epitope; P2; prostate specific membrane antigen; vaccination;
 KW cytotoxic T-lymphocyte immunity; self-protein; cancer; breast cancer;
 KW prostate cancer; cell-associated peptide antigen.
 XX
 OS Synthetic.
 OS Homo sapiens.

XX Key Location/Qualifiers
 FH Peptide 6..26
 FT /label= P30
 FT
 XX WO200020027-A2.
 XX
 XX 13-APR-2000.
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 XX
 XX 05-OCT-1998; 98DK-00001261.
 XX 20-OCT-1998; 98US-0105011P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 XX
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 XX
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page 118; 220pp; English.
 XX

AAV92650-55 are peptides designed which correspond to the P2 and P30 epitopes with 5 flanking human prostate specific membrane antigen (hPSM) amino acids in each end. The flanking amino acids correspond to the cell proliferation sites 6, 8 and 10. The peptides will be used in, e.g. T cell proliferation assays, but also for ELISA or other in vitro assays. The claims detail a method for inducing immune responses against weakly immunogenic cell-associated peptide antigens (PA) such as those associated with cancers (i.e. self-proteins), for example, hPSM, heregulin 2 (Her2) and/or fibroblast growth factor 8b (FGF8b). The method comprises effecting simultaneous presentation by antigen producing cells (APCs) of the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from the PA and/or at least 1 B-cell group derived from the cell-associated PA; and (2) at least 1 first T helper cell group which is foreign to the animal. Analogues of human PSM, human Her2 and human/murine FGF8b comprising a substantial part of all known and predicted CTL and B-cell epitopes of the respective PA and including at least one foreign T helper epitope (e.g. P2 and/or P30) are also claimed. The method is used to treat prostate, prostate/breast or breast cancer when the PA is human PSM, FGF8b and Her2, respectively.

Sequence 31 AA;

Query Match 100.0%; Score 112; DB 3; Length 31;
 Best Local Similarity 100.0%; Pred. No. 1.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 ||||| ||||| ||||| ||||| |||||
 Db 6 FNNFTVSFWLRVPKVSASHLE 26

RESULT 48

AA62702
 ID AAR62702 standard; peptide; 32 AA.

AC AAR62702;

XX 25-MAR-2003 (revised)
 DT 10-SEP-1995 (first entry)

XX LHRH-containing immunogenic peptide.

XX Helper T cell epitope; universal immune stimulator; invasive; haptens;
 KW vaccine; LHRH; luteinising hormone releasing hormone; prostate;
 KW androgen-dependent carcinoma; antitumour; infertility; tetanus toxin.

OS Synthetic.

XX Key Location/Qualifiers
 FH Domain 1..22
 FT /note= "tetanus toxin helper T cell epitope"
 FT Domain 23..32
 FT /note= "LHRH hapten"

XX WO9425060-A1.

PN 10-NOV-1994.

PD 28-APR-1994; 94WO-US004832.

PF 27-APR-1993; 93US-00057166.

PR 14-APR-1994; 94US-00229275.

XX (LADD/) LADD A E.

PA (WANG/) WANG C Y.

PA (ZAMB/) ZAMB T.

XX Ladd AE, Wang CY, Zamb T;

XX WPI, 1994-357910/44.

XX Immunogenic luteinising hormone releasing hormone peptide(s) - that
 PT suppress LHRH activity in males and females.

XX Claim 8; Page 84; 213pp; English.
 PS Synthetic immunogenic peptides are provided in which a universal immune
 CC stimulator is linked to a peptide or protein hapten containing B cell
 CC and/or cytotoxic T lymphocyte epitopes, giving a product which causes
 CC potent immune responses to the coupled peptide or protein. The stimulator
 CC consists of (A) a promiscuous helper T cell epitope (Th) which elicits an
 CC immune response to the coupled peptide in members of a heterogeneous
 CC population expressing diverse HLA phenotypes, and (B) an adjuvant peptide
 CC sequence from the invasive protein of Yersinia. Spacer amino acid
 CC sequences (e.g. Gly-Gly) can be provided between the invasin and Th
 CC domains and between the immune stimulator and hapten components. When the
 CC hapten is LHRH, then optionally the invasin domain can be omitted from
 CC the immune stimulator component. The present sequence represents an LHRH-
 CC containing, invasin-free immunogenic peptide as above which can be used
 CC as a potent vaccine for treating e.g. prostatic hyperplasia, androgen-
 CC dependent carcinoma, prostatic carcinoma, testicular carcinoma,
 CC endometriosis, benign uterine tumours, recurrent functional ovarian
 CC cysts, (severe) premenstrual syndrome or oestrogen-dependent breast
 CC cancer, or for induction of infertility. (Updated on 25-MAR-2003 to
 CC correct PN field.)

XX Sequence 32 AA;

Query Match 100.0%; Score 112; DB 2; Length 32;
 Best Local Similarity 100.0%; Pred. No. 1.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 ||||| ||||| ||||| ||||| |||||
 Db 3 FNNFTVSFWLRVPKVSASHLE 23

RESULT 49

AA649075
 ID AAB49075 standard; peptide; 33 AA.

AC AAB49075;

XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)

XX Amyloid beta/tetanus toxoid immunogenic fusion peptide, SEQ ID NO:11.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX WO200072876-A2.

PD 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI, 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component

FT useful for treating amyloid diseases or amyloidoses.

PS Disclosure; Page 45; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX Sequence 33 AA;

SQ Query Match 100.0%; Score 112; DB 4; Length 33;
 Best Local Similarity 100.0%; Pred. No. 1.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 8 FNNFTVSFWLRVPKVSASHLE 28

RESULT 50

AAU11421
 ID AAU11421 standard; peptide; 34 AA.

AC AAU11421;

XX 12-MAR-2002 (first entry)

XX Synthetic immunogen peptide 2.

DE Gonadotropin releasing hormone; GnRH; synthetic immunogen;
 KW luteinising hormone releasing hormone; LHRH; contraceptive;
 KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 KW breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX Clostridium tetani.

OS Mammalia.

OS Synthetic.

OS Chimeric.

XX Key Location/Qualifiers

FT Peptide 1..21

FT Peptide /note= "Tetanus toxoid sequence (947-967 aa)"

FT Peptide 22..25

FT Peptide /note= "Spacer peptide"

FT Peptide 26..34

FT Modified-site 34 /note= "Gonadotropin releasing hormone epitope"

FT /note= "Amidated glycine or glycineamide"

PN WO200185763-A2.

XX 15-NOV-2001.

XX 04-MAY-2001; 2001WO-US014363.

XX 05-MAY-2000; 2000US-0202328P.

XX (APHT-) APHTON CORP.

XX Grimes S, Michaeli D, Stevens VC;

XX WPI; 2002-0494440/06.

XX Novel synthetic immunogen for inducing immune response against
 CC gonadotropin releasing hormone, comprises fusion peptide having
 CC promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 CC or its analog.

XX Claim 11; Page 7; 43pp; English.

XX The invention relates to a synthetic immunogen for inducing specific
 CC antibodies against gonadotropin releasing hormone (GnRH) also known as
 CC luteinising hormone releasing hormone, LHRH) comprising a fusion peptide
 CC which comprises a promiscuous helper T-cell peptide epitope and
 CC immunomimic peptide epitope or its analogue. The synthetic immunogen is
 CC useful inducing an immune response against GnRH in an animal subject, and
 CC as such is useful as a contraceptive and in the treatment of diseases
 CC such as cancer (of the breast, uterus and other gynaecological cancer),
 CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is a synthetic
 CC immunogen of the invention

XX Sequence 34 AA;

SQ Query Match 100.0%; Score 112; DB 5; Length 34;
 Best Local Similarity 100.0%; Pred. No. 1.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 51

AAG63662

ID AAG63662 standard; peptide; 36 AA.

XX AAG63662;

XX 29-OCT-2001 (first entry)

DE Peptide comprising 5 conjugation sites for a pseudopeptide.

XX Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
 KW macrophage; dendritic cell; vaccine; autoimmune disease.

XX Synthetic.

XX WO200146127-A1.

XX 28-JUN-2001.

XX 22-DEC-1999; 99WO-IB002038.

XX 22-DEC-1999; 99WO-IB002038.

XX (OMPH-) OM-PHARMA.

XX Bauer J, Martin OR, Rodriguez S;

CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 43 AA;

Query Match 100.0%; Score 112; DB 4; Length 43;

Best Local Similarity 100.0%; Pred. No. 1.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 FNNFTVSFWLRVVKVSASHLE 21

DB 23 FNNFTVSFWLRVVKVSASHLE 43

RESULT 56

AAB46177

ID AAB46177 standard; peptide; 43 AA.

XX AC AAB46177;

XX DT 04-APR-2001 (first entry)

XX DE Tetanus toxoid 830-844 + 947-967 epitope AN90542.

XX KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;

XX KW PC receptor mediated phagocytosis; immunogenic response; neuroprotective;

XX KW amyloid precursor protein; Alzheimer's disease.

XX OS Clostridium tetani.

XX XX WO200072880-A2.

XX PD 07-DEC-2000.

XX PF 26-MAY-2000; 2000WO-US014810.

XX PR 28-MAY-1999; 99US-00322289.

XX PA (NEUR-) NEURALAB LTD.

XX PI Schenk DB, Bard F, Vazquez NJ, Yednock T;

XX DR WPI; 2001-032104/04.

XX PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX PS Disclosure; Page 31; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (PC
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

XX SQ Sequence 43 AA;

Query Match 100.0%; Score 112; DB 4; Length 43;

Best Local Similarity 100.0%; Pred. No. 1.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 FNNFTVSFWLRVVKVSASHLE 21

DB 23 FNNFTVSFWLRVVKVSASHLE 43

RESULT 57

ADP02902

ID ADP02902 standard; peptide; 43 AA.

XX AC ADP02902;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #14 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;

XX KW aggregation; brain; immunogenic response; beta-amyloid;

XX KW Parkinson's disease.

XX OS Synthetic.

XX XX WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX PA (ELAN-) ELAN PHARM INC.

XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.

XX PS Disclosure; SEQ ID NO 35; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta

CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 43 AA;

Query Match 100.0%; Score 112; DB 8; Length 43;
 Best Local Similarity 100.0%; Pred. No. 1.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 23 FNNFTVSFWLRVPKVSASHLE 43

RESULT 58

AAB49090
 ID AAB49090 standard; protein; 44 AA.

XX AC AAB49090;

XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)

XX Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:26.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.

XX Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by

CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 112; DB 4; Length 44;

Best Local Similarity 100.0%; Pred. No. 1.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 24 FNNFTVSFWLRVPKVSASHLE 44

RESULT 59

AAB46194

ID AAB46194 standard; peptide; 44 AA.

XX AC AAB46194;

XX 04-APR-2001 (first entry)

DE Tetanus toxoid epitope fusion construct #14.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; nootropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

OS Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have nootropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The

CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease

SQ Sequence 44 AA;

Query Match 100.0%; Score 112; DB 4; Length 44;
 Best Local Similarity 100.0%; Pred. No. 1.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSWLRVPKVSASHLE 21
 |||||
 DB 24 FNNFTVSWLRVPKVSASHLE 44

RESULT 60
 ADP02917

ID ADP02917 standard; peptide; 44 AA.

XX AC ADP02917;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #29 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 aggregation; brain; immunogenic response; beta-amyloid;
 XX KW Parkinson's disease.

XX OS Synthetic.

XX XX WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX XX (ELAN-) ELAN PHARM INC.
 XX PA (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX XX WPI; 2004-411388/38.

XX PT Preventing or treating disease such as Parkinson's disease characterized
 by Lewy bodies or alpha-synuclein aggregation in brain by administering
 agent that induces immunogenic response against alpha-synuclein and/or
 beta-amyloid.

XX PS Disclosure; SEQ ID NO 50; 78pp; English.

XX CC The invention relates to a method of preventing (M1) or treating a
 disease characterized by Lewy bodies or alpha-synuclein aggregation in
 the brain, by administering an agent that induces an immunogenic response
 against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 useful for preventing or treating a disease such as Parkinson's disease
 characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 which involves administering agent that induces immunogenic response
 against alpha-synuclein and/or Abeta to a patient, and the administration
 improves motor characteristics of the patient. Alpha-synuclein or Abeta
 is useful in the manufacture of a preparation for simultaneous, separate
 or sequential treatment of disease characterized by Lewy bodies or alpha-
 synuclein aggregation. This sequence corresponds to a fusion peptide used
 in the method of the invention.

XX SQ Sequence 44 AA;

Query Match 100.0%; Score 112; DB 8; Length 44;
 Best Local Similarity 100.0%; Pred. No. 1.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSWLRVPKVSASHLE 21

DB 24 FNNFTVSWLRVPKVSASHLE 44

RESULT 61

AAU11429
 ID AAU11429 standard; peptide; 50 AA.

XX AC AAU11429;

XX DT 12-MAR-2002 (first entry)

XX DE Synthetic immunogen peptide 10.

XX KW Gonadotrophin releasing hormone; GnRH; synthetic immunogen;
 luteinising hormone releasing hormone; LHRH; contraceptive;
 XX KW promiscuous helper T-cell peptide epitope; immunomimic peptide epitope;
 breast cancer; uterine cancer; gynaecological cancer; endometriosis;
 XX KW uterine fibroid; benign prostatic hypertrophy; prostate cancer.

XX OS Clostridium tetani.

XX OS Mammalia.

XX OS Synthetic.

XX OS Chimeric.

XX FH Key

XX FT Peptide

XX FT Location/Qualifiers

XX FT 1. 10
 /note= "Gonadotrophin releasing hormone epitope (1. 10
 aa)"

XX FT Misc-difference 1

XX FT /label= OTHER

XX FT /note= "Pyro-glutamic acid or 5-oxo proline"

XX FT Peptide

XX FT 11. 16
 /note= "Spacer peptide"

XX FT Peptide

XX FT 17. 37
 /note= "Tetanus toxoid (947-967 aa)"

XX FT Peptide

XX FT 38. 41
 /note= "Spacer peptide"

XX FT Peptide

XX FT 42. 50
 /note= "Gonadotrophin releasing hormone epitope (2-10
 aa)"

XX FT Modified-site

XX FT 50
 /note= "Amidated glycine or glycineamide"

XX FT WO200195763-A2.

XX PD 15-NOV-2001.

XX PF 04-MAY-2001; 2001WO-US014363.

XX PR 05-MAY-2000; 2000US-0202328P.

XX XX (APHT-) APHTON CORP.

XX PA Grimes S, Michaeli D, Stevens VC;

XX XX WPI; 2002-049440/06.

XX PT Novel synthetic immunogen for inducing immune response against
 gonadotrophin releasing hormone, comprises fusion peptide having
 promiscuous helper T-cell peptide epitope and immunomimic peptide epitope
 or its analog.
 XX PS Claim 11; Page 11; 43pp; English.

XX CC The invention relates to a synthetic immunogen for inducing specific
 antibodies against gonadotrophin releasing hormone (GnRH) also known as
 luteinising hormone releasing hormone (LHRH) comprising a fusion peptide
 which comprises a promiscuous helper T-cell peptide epitope and
 immunomimic peptide epitope or its analogue. The synthetic immunogen is
 useful inducing an immune response against GnRH in an animal subject, and
 as such is useful as a contraceptive and in the treatment of diseases
 such as cancer (of the breast, uterus and other gynaecological cancer),

CC endometriosis, uterine fibroids, benign prostatic hypertrophy and
 CC prostate cancer. The immunogen is effective in eliciting high and
 CC specific anti-GnRH antibody titres. The present sequence is a synthetic
 CC immunogen of the invention
 XX
 SQ Sequence 50 AA;

Query Match 100.0%; Score 112; DB 5; Length 50;
 Best Local Similarity 100.0%; Pred. No. 2.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 17 FNNFTVSFWLRVPKVSASHLE 37

RESULT 62
 AAB49091
 ID AAB49091 standard; protein; 51 AA.
 XX

AC AAB49091;

XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 XX

DE Amyloid beta/tetanus toxoid immunogenic fusion protein, SEQ ID NO:27.

XX Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS

XX WO200072876-A2.

XX 07-DEC-2000.

XX 01-JUN-2000; 2000WO-US015239.

XX 01-JUN-1999; 99US-0137010P.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB;

XX WPI; 2001-070921/08.

XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidosis.

XX Disclosure; Page 46; 140pp; English.

XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by

CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jacob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)
 XX
 SQ Sequence 51 AA;

Query Match 100.0%; Score 112; DB 4; Length 51;
 Best Local Similarity 100.0%; Pred. No. 2.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 24 FNNFTVSFWLRVPKVSASHLE 44

RESULT 63

AAB46195

ID AAB46195 standard; peptide; 51 AA.

XX AAB46195;

XX 04-APR-2001 (first entry)

XX Tetanus toxoid epitope fusion construct #15.

XX Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.

XX Clostridium tetani.

XX WO200072880-A2.

XX 07-DEC-2000.

XX 26-MAY-2000; 2000WO-US014810.

XX 28-MAY-1999; 99US-00322289.

XX (NEUR-) NEURALAB LTD.

XX Schenk DB, Bard F, Vasquez NJ, Yednock T;

XX WPI; 2001-032104/04.

XX Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.

XX Disclosure; Page 32; 143pp; English.

XX This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The

CC methods are useful for prophylactic and therapeutic treatment of
CC Alzheimer's disease

SQ Sequence 51 AA;

Query Match 100.0%; Score 112; DB 4; Length 51;
Best Local Similarity 100.0%; Pred. No. 2.1e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFRLRPVKVSASHLE 21
|||||
DB 24 FNNFTVSFRLRPVKVSASHLE 44

RESULT 64

ID ADP02918
ADP02918 standard; peptide; 51 AA.

XX ADP02918;

XX 12-AUG-2004 (first entry)

XX Fusion protein #30 for treating neurodegenerative disorder.

XX antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
KW aggregation; brain; immunogenic response; beta-amyloid;
KW Parkinson's disease.

XX Synthetic.

XX WO2004041067-A2.

XX 21-MAY-2004.

XX 31-OCT-2003; 2003WO-US034527.

XX 01-NOV-2002; 2002US-0423012P.

XX (ELAN-) ELAN PHARM INC.
PA (REGC) UNIV CALIFORNIA.

XX Schenk DB, Masliah E;

XX WPI; 2004-411388/38.

XX Preventing or treating disease such as Parkinson's disease characterized
PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
PT agent that induces immunogenic response against alpha-synuclein and/or
PT beta-amyloid.

XX Disclosure; SEQ ID NO 51; 78pp; English.

XX The invention relates to a method of preventing (M1) or treating a
CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
CC the brain, by administering an agent that induces an immunogenic response
CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
CC useful for preventing or treating a disease such as Parkinson's disease
CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
CC which involves administering agent that induces immunogenic response
CC against alpha-synuclein and/or Abeta to a patient, and the administration
CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
CC is useful in the manufacture of a preparation for simultaneous, separate
CC or sequential treatment of disease characterized by Lewy bodies or alpha-
CC synuclein aggregation. This sequence corresponds to a fusion peptide used
CC in the method of the invention.

SQ Sequence 51 AA;

Query Match 100.0%; Score 112; DB 8; Length 51;
Best Local Similarity 100.0%; Pred. No. 2.1e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFRLRPVKVSASHLE 21

DB 24 FNNFTVSFRLRPVKVSASHLE 44
|||||

RESULT 65

AAG63661

ID AAG63661 standard; peptide; 59 AA.

XX AAG63661;

XX 29-OCT-2001 (first entry)

XX Peptide comprising 4 conjugation sites for a pseudopeptide.

XX Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
KW macrophage; dendritic cell; vaccine; autoimmune disease.

XX Synthetic.

XX WO200146127-A1.

XX 28-JUN-2001.

XX 22-DEC-1999; 99WO-IB002038.

XX 22-DEC-1999; 99WO-IB002038.

XX (OMPH-) OM-PHARMA.

XX Bauer J, Martin OR, Rodriguez S;

XX WPI; 2001-502469/55.

XX New amphiphilic acylated pseudopeptides having a functionalized auxiliary
PT spacer, useful as immunomodulators, e.g. as adjuvants in vaccines.

XX Example 3; Page 59; 166pp; French.

XX The specification describes N-Acylated pseudopeptides, which have a
CC neutral or charged acidic group at one terminal and a functionalized
CC auxiliary spacer at the other. The pseudopeptides show immunomodulatory
CC and adjuvant action, based on activation of antigen presenting cells
CC (e.g. macrophages or dendritic cells), induction of differentiation of
CC dendritic cells, induction of cytokine production and induction of
CC maturation of immunocompetent cell strains originating from hematopoietic
CC and lymphoid organs. They reinforce humoral and cellular immunity. They
CC can be grafted onto antigens (to modulate immune response) or onto drugs
CC (to improve the therapeutic activity or targeting). The pseudopeptides
CC are thus useful in human or veterinary medicine as immunizing or
CC diagnostic agents. Typically, they are used as adjuvants together with
CC (or covalently bonded to) antigens for vaccination against viral,
CC parasitic/protozoal, microbial or fungal infections, incubated with blood
CC cells ex vivo, to render the cells immunocompetent before reintroduction
CC in vivo; or used in therapy of certain autoimmune diseases. The
CC pseudopeptides are useful as carriers for antigens or other therapeutic
CC agents due to their ability to form non-covalent bonds via the
CC hydrophobic or hydrophilic auxiliary spacer. The present sequence
CC represents a peptide, which has 4 possible conjugation sites for the
CC pseudopeptides of the invention

SQ Sequence 59 AA;

Query Match 100.0%; Score 112; DB 4; Length 59;
Best Local Similarity 100.0%; Pred. No. 2.5e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFRLRPVKVSASHLE 21
|||||

DB 39 FNNFTVSFRLRPVKVSASHLE 59

RESULT 66

AAG63513

ID XX AAG63513 standard; peptide; 59 AA.
 AC XX AAG63513;
 DT XX 15-OCT-2001 (first entry)
 DE XX A peptide which may be conjugated to pseudopeptides.
 KW Pseudopeptide; immunomodulation; adjuvant; antigen presenting cell;
 KW macrophage; dendritic cell; cytokine production; immunocompetent cell;
 KW autoimmune disease.
 XX OS Synthetic.
 XX WO200146126-A1.
 XX 28-JUN-2001.
 XX 21-DEC-2000; 2000WO-FR003650.
 XX 22-DEC-1999; 99WO-IB002038.
 XX (OMPH-) OM-PHARMA.
 XX Bauer J, Martin OR, Rodriguez S;
 XX WPI; 2001-496651/54.
 XX New amphiphilic acylated pseudopeptides having a functionalized auxiliary
 FT spacer, useful as immunomodulators, e.g. as adjuvants in vaccines.
 XX
 PS Example 3.2; Page 87; 267pp; French.

CC The specification describes N-Acylated pseudopeptides, which have a
 CC neutral or charged acidic group at one terminal and a functionalized
 CC auxiliary spacer at the other. The pseudopeptides show immunomodulatory
 CC and adjuvant action, based on activation of antigen presenting cells
 CC (e.g. macrophages or dendritic cells), induction of differentiation of
 CC dendritic cells, induction of cytokine production and induction of
 CC maturation of immunocompetent cell strains originating from hematopoietic
 CC and lymphoid organs. They reinforce humoral and cellular immunity. They
 CC can be grafted onto antigens (to modulate immune response) or onto drugs
 CC (to improve the therapeutic activity or targeting). The pseudopeptides
 CC are thus useful in human or veterinary medicine as immunizing or
 CC diagnostic agents. Typically, the pseudopeptides are used as adjuvants
 CC together with (or covalently bonded to) antigens for vaccination against
 CC viral, parasitic/protozoal, microbial or fungal infections; incubated
 CC with blood cells *ex vivo*, to render the cells immunocompetent before
 CC reintroduction in vivo; or used in therapy of certain autoimmune
 CC diseases. The present sequence represents a peptide which may be
 CC conjugated to pseudopeptides of the invention

XX Sequence 59 AA;

Query Match 100.0%; Score 112; DB 4; Length 59;
 Best Local Similarity 100.0%; Pred. No. 2.5e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 39 FNNFTVSFWLRVPKVSASHLE 59

RESULT 67

AAR14263
 ID AAR14263 standard; peptide; 63 AA.
 AC AAR14263;
 XX 14-JAN-1992 (first entry)

XX Immunogenic branched polypeptides for antimalarial vaccines.
 DE
 XX

KW Immunogen; Plasmodium; malaria; lysine; immunoassay.
 XX Synthetic.
 XX Location/Qualifiers
 FH 25..38
 FT /label= T epitope
 FT 39..59
 FT /label= T epitope
 FT 60
 FT Modified-site
 FT /note= "epsilon amino substituted with the sequence
 FT (NANP)6QYIKANSKFIGITEFNFTVSFWLRVPKVSASHLE"
 FT 61
 FT Modified-site
 FT /note= "epsilon amino substituted by Lys in which both
 FT alpha and epsilon amino groups are substituted with the
 FT sequence (NANP)6QYIKANSKFIGITEFNFTVSFWLRVPKVSASHLE"
 FT 62
 FT Modified-site
 FT /note= "epsilon amino substituted by Lys in which each of
 FT the alpha and epsilon amino groups is substituted by Lys,
 FT both of the latter two Lys residues being substituted in
 FT each of their alpha and epsilon amino groups by
 FT (NANP)6QYIKANSKFIGITEFNFTVSFWLRVPKVSASHLE"
 XX

PN EP450715-A.

XX 09-OCT-1991.

XX 28-MAR-1991; 91EP-00200727.

XX 02-APR-1990; 90IT-00019914.

XX (ENIE) ENIRICERCH SPA.

XX Pessi A, Bianchi E, Corradin G;

XX WPI; 1991-297504/41.

XX New immunogenic branched polypeptide derivs. - used as antigens in enzyme
 PT immunoassays and as anti sporozoite vaccines against Plasmodium
 PT falciparum.

XX Claim 10; Page 15; 22pp; English.

XX The peptide is a specific example of highly generic immunogenic
 CC substituted lysines or polylysines having a number n (where n is 1-15) of
 CC L-lysine amino acid residues of alpha and epsilon amide linkage, where
 CC (n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
 CC groups are substituted with polypeptides consisting of one or more
 CC plasmodial B epitopes covalently bound to one or more peptides with an
 CC amino acid sequence corresponding to that of a T epitope such as
 CC FNNFTVSFWLRVPKVSASHLE or QYIKANSKFIGITE. The branched polypeptides can
 CC be used as immunogens for preparing genetically non-restricted
 CC antimalaria vaccines and for determining anti-Plasmodium antibodies in
 CC blood, serum and blood-spot samples. Determination can be effected by
 CC ELISA. See also AAR14261-2, AAR14264-5 and AAR15436

XX Sequence 63 AA;

Query Match 100.0%; Score 112; DB 2; Length 63;
 Best Local Similarity 100.0%; Pred. No. 2.7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 39 FNNFTVSFWLRVPKVSASHLE 59

RESULT 68

AAR14261
 ID AAR14261 standard; peptide; 64 AA.
 AC AAR14261;

XX

DT 14-JAN-1992 (first entry)
 XX Immunogenic branched polypeptides for antimalarial vaccines.
 DE Immunogen; Plasmodium; malaria; lysine; immunoassay.
 KW Synthetic.
 XX
 OS Key
 XX Region
 FT Location/Qualifiers
 FT 1..21
 FT /label= T epitope
 FT Modified-site
 FT 62
 FT /note= "epsilon-amino substituted with the sequence
 FT FNNFTVSFWLRVPKVSASHLE (NANP) 10"
 FT Modified-site
 FT 63
 FT /note= "epsilon-amino group substituted with Lys in which
 FT both alpha and epsilon amino groups are substituted with
 FT the sequence FNNFTVSFWLRVPKVSASHLE (NANP) 10"
 XX
 PN EP450715-A.
 XX
 XX 09-OCT-1991.
 PD
 XX
 XX 28-MAR-1991; 91EP-00200727.
 PF
 XX 02-APR-1990; 90IT-00019914.
 PR
 XX (ENTE) ENIRICERCH SPA.
 PA
 XX
 PI Pessi A, Bianchi E, Corradin G;
 XX
 DR WPI; 1991-297504/41.
 XX
 XX New immunogenic branched polypeptide derivs. - used as antigens in enzyme
 PT immunoassays and as anti sporozoite vaccines against Plasmodium
 PT falciparum.
 PT
 XX
 PS Claim 8; Page 15; 22pp; English.
 XX
 CC The peptide is a specific example of highly generic immunogenic
 CC substituted lysines or polylysines having a number n (where n is 1-15) of
 CC L-lysine amino acid residues of alpha and epsilon amide linkage, where
 CC (n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
 CC groups are substituted with polypeptides consisting of one or more
 CC plasmoidal B epitopes covalently bound to one or more peptides with an
 CC amino acid sequence corresponding to that of a T epitope such as
 CC FNNFTVSFWLRVPKVSASHLEA or QYIKANSKPIGITE. The branched polypeptides can
 CC be used as immunogens for preparing genetically non-restricted
 CC antimalaria vaccines and for determining anti-Plasmodium antibodies in
 CC blood, serum and blood-spot samples. Determination can be effected by
 CC ELISA. See also AAR14262 - AAR14265 and AAR15436
 XX
 SQ Sequence 64 AA;
 Query Match 100.0%; Score 112; DB 2; Length 64;
 Best Local Similarity 100.0%; Pred. No. 2.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 RESULT 69
 ADM06902
 ID ADM06902 standard; peptide; 64 AA.
 XX
 AC ADM06902;
 XX
 DT 17-JUN-2004 (first entry)
 XX
 DE Mature rat ghrelin with added epitopes (peptide 3), SEQ ID NO:15.
 XX

KW Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnerary; vaccine; rat; epitope.
 XX
 OS Rattus sp.
 XX Synthetic.
 XX
 PN WO2004024183-A1.
 XX
 XX 25-MAR-2004.
 PD
 XX
 PF 12-SEP-2003; 2003WO-DK000592.
 XX
 PR 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX
 PA (PHAR-) PHARMEXA AS.
 XX
 PI Boving TEG, Klyaner S;
 XX
 DR WPI; 2004-329403/30.
 XX
 PT Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX
 PS Example 1; SEQ ID NO 15; 83pp; English.
 XX
 CC The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting a
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the
 CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
 CC related cancers. The present sequence represents a ghrelin analogue
 CC comprising mature rat ghrelin with added epitopes used in an example of
 CC the invention.
 XX
 SQ Sequence 64 AA;
 Query Match 100.0%; Score 112; DB 8; Length 64;
 Best Local Similarity 100.0%; Pred. No. 2.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 44 FNNFTVSFWLRVPKVSASHLE 64
 |||||
 RESULT 70
 AAR14265
 ID AAR14265 standard; peptide; 65 AA.
 XX
 AC AAR14265;
 XX
 DT 14-JAN-1992 (first entry)
 XX

Immunogenic branched polypeptides for antimalarial vaccines.

Immunogen; Plasmodium; malaria; lysine; immunoassay.

Synthetic.

Key Location/Qualifiers
Region 1..21
/label= T epitope
Modified-site 63
/note= "epsilon amino substituted with the sequence FNNFTVSFWLRVPKVSASHLE (NANP)10K"
Modified-site 64
/note= "epsilon amino substituted with lys in which alpha and epsilon amino groups are each substituted with the sequence FNNFTVSFWLRVPKVSASHLE (NANP)10K"
EP450715-A.
09-OCT-1991.
28-MAR-1991; 91EP-00200727.
02-APR-1990; 90IT-00019914.
(ENIE) ENIRICERCH SPA.
Pessi A, Bianchi E, Corradin G;
WPI; 1991-297504/41.
New immunogenic branched polypeptide derivs. - used as antigens in enzyme immunoassays and as anti sporozoite vaccines against Plasmodium falciparum.
Claim 13; Page 16; 22pp; English.
The peptide is a specific example of highly generic immunogenic substituted lysines or polylysines having a number n (where n is 1-15) of L-lysine amino acid residues of alpha and epsilon amide linkage, where (n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino groups are substituted with polypeptides consisting of one or more plasmodial B epitopes covalently bound to one or more peptides with an amino acid sequence corresponding to that of a T epitope such as FNNFTVSFWLRVPKVSASHLEA or QYKANSKFIGITE. The branched polypeptides can be used as immunogens for preparing genetically non-restricted antimalaria vaccines and for determining anti-Plasmodium antibodies in blood, serum and blood-spot samples. Determination can be effected by ELISA. See also AAR14261 - AAR14264, AAR14266 and AAR15436
Sequence 65 AA;

Query Match 100.0%; Score 112; DB 2; Length 65;
Best Local Similarity 100.0%; Pred. No. 2.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 71
AAR14262
ID AAR14262 standard; peptide; 65 AA.
AC AAR14262;

14-JAN-1992 (first entry)

Immunogenic branched polypeptides for antimalarial vaccines.

Immunogen; Plasmodium; malaria; lysine; immunoassay.

Synthetic.

Key Location/Qualifiers
Region 1..21
/label= T epitope
Modified-site 62
/note= "epsilon amino substituted by the sequence VQGEESNDK"
Modified-site 63
/note= "epsilon amino substituted by Lys in which the alpha amino is substituted with the sequence FNNFTVSFWLRVPKVSASHLE (NANP)10 and the epsilon amino is substituted with the sequence VQGEESNDK"
Modified-site 64
/note= "epsilon amino substituted by Lys in which both the alpha and epsilon amino groups are substituted with further Lys residues, the latter two Lys residues each being substituted on the alpha amino by FNNFTVSFWLRVPKVSASHLE (NANP)10 and on the epsilon amino by the sequence VQGEESNDK"

EP450715-A.

09-OCT-1991.

28-MAR-1991; 91EP-00200727.

02-APR-1990; 90IT-00019914.

(ENIE) ENIRICERCH SPA.

Pessi A, Bianchi E, Corradin G;

WPI; 1991-297504/41.

New immunogenic branched polypeptide derivs. - used as antigens in enzyme immunoassays and as anti sporozoite vaccines against Plasmodium falciparum.

Claim 9; Page 15; 22pp; English.

The peptide is a specific example of highly generic immunogenic substituted lysines or polylysines having a number n (where n is 1-15) of L-lysine amino acid residues of alpha and epsilon amide linkage, where (n+1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino groups are substituted with polypeptides consisting of one or more plasmodial B epitopes covalently bound to one or more peptides with an amino acid sequence corresponding to that of a T epitope such as FNNFTVSFWLRVPKVSASHLEA or QYKANSKFIGITE. The branched polypeptides can be used as immunogens for preparing genetically non-restricted antimalaria vaccines and for determining anti-Plasmodium antibodies in blood, serum and blood-spot samples. Determination can be effected by ELISA. See also AAR14262 - AAR14265 and AAR15436
Sequence 65 AA;

Query Match 100.0%; Score 112; DB 2; Length 65;
Best Local Similarity 100.0%; Pred. No. 2.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 72
ADM06904
ID ADM06904 standard; peptide; 68 AA.
AC ADM06904;

17-JUN-2004 (first entry)

DE Mature ghrelin with added epitopes (peptide 5), SEQ ID NO:17.
 XX Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnery; vaccine; epitope.
 XX Synthetic.
 OS Unidentified.
 XX WO2004024183-A1.
 PN 25-MAR-2004.
 XX 12-SEP-2003; 2003WO-DK000592.
 PF 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX (PHAR-) PHARMEXA AS.
 PA Boving TEG, Klyser S;
 PI WPI; 2004-329403/30.
 DR Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX Example 1; SEQ ID NO 17; 83pp; English.
 PS The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the
 CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
 CC related cancers. The present sequence represents a ghrelin analogue
 CC comprising mature ghrelin with added epitopes used in an example of the
 CC invention.
 XX Sequence 68 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 68;
 Best Local Similarity 100.0%; Pred. No. 3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLVRPKVSASHLE 21
 DB 46 FNNFTVSFWLVRPKVSASHLE 66
 RESULT 73
 ADM06903
 ID ADM06903 standard; peptide; 68 AA.
 XX
 AC ADM06903;
 XX

DT 17-JUN-2004 (first entry)
 DE Mature ghrelin with added epitopes (peptide 4), SEQ ID NO:16.
 XX Ghrelin; autologous ghrelin; ghrelin analogue; immunogen; immunisation;
 KW anti-ghrelin antibody; obesity; anorexia; cachexia; wound; burn;
 KW adjuvant therapy; in vitro fertilisation; ghrelin-related cancer;
 KW ghrelin receptor-related cancer; anorectic; cytostatic; metabolic;
 KW immunomodulator; vulnery; vaccine; epitope.
 XX Synthetic.
 OS Unidentified.
 XX WO2004024183-A1.
 PN 25-MAR-2004.
 XX 12-SEP-2003; 2003WO-DK000592.
 PF 12-SEP-2002; 2002DK-00001345.
 PR 12-SEP-2002; 2002US-0410164P.
 XX (PHAR-) PHARMEXA AS.
 PA Boving TEG, Klyser S;
 PI WPI; 2004-329403/30.
 DR Immunizing against autologous ghrelin in animals e.g. human beings,
 PT useful for treating obesity, by presenting ghrelin polypeptide, its
 PT subsequence or analog, to animal's immune system, for producing
 PT antibodies against ghrelin.
 XX Example 1; SEQ ID NO 16; 83pp; English.
 PS The invention relates to a method for immunising animals (including
 CC humans) against autologous ghrelin. The method involves presenting a
 CC ghrelin (or sub-sequence thereof) or a ghrelin analogue comprising a
 CC ghrelin B-cell epitope and non-ghrelin chemical moieties to the immune
 CC system, thereby inducing the production of antibodies against the
 CC animal's autologous ghrelin. The invention also relates to immunogenic
 CC compositions comprising ghrelin, a ghrelin sub-sequence or a ghrelin
 CC analogue of the invention; a nucleic acid encoding a ghrelin analogue of
 CC the invention; vectors and host cells comprising this nucleic acid; a
 CC method of identifying a modified ghrelin polypeptide capable of inducing
 CC antibodies against unmodified autologous ghrelin; and use of immunogenic
 CC compositions of the invention. The method of the invention is useful for
 CC treating, preventing or ameliorating obesity or other conditions
 CC characterised by excess body fat deposits by downregulating ghrelin to
 CC such an extent that the total amount of body fat is significantly
 CC decreased. The method may also be used for upregulating ghrelin for the
 CC treatment, prevention or amelioration of anorexia or cachexia. The method
 CC may also be used for treating wound or burns, in adjuvant therapy for in
 CC vitro fertilisation, and for treating ghrelin and ghrelin-receptor
 CC related cancers. The present sequence represents a ghrelin analogue
 CC comprising mature ghrelin with added epitopes used in an example of the
 CC invention.
 XX Sequence 68 AA;
 SQ Query Match 100.0%; Score 112; DB 8; Length 68;
 Best Local Similarity 100.0%; Pred. No. 3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLVRPKVSASHLE 21
 DB 3 FNNFTVSFWLVRPKVSASHLE 23
 RESULT 74
 AAB46190
 ID AAB46190 standard; peptide; 72 AA.
 XX

AC AAB46190;
 XX
 DT 04-APR-2001 (first entry)
 XX
 DE Tetanus toxoid epitope fusion construct #10.
 XX
 KW Amyloid deposit; APP; Abeta; brain; human; clearing response; neurotropic;
 KW Fc receptor mediated phagocytosis; immunogenic response; neuroprotective;
 KW amyloid precursor protein; Alzheimer's disease.
 XX
 OS Clostridium tetani.
 XX
 PN WO200072880-A2.
 PD
 PD 07-DEC-2000.
 XX
 PF 26-MAY-2000; 2000WO-US014810.
 XX
 PR 28-MAY-1999; 99US-00322289.
 XX
 PA (NEUR-) NEURALAB LTD.
 XX
 PI Schenk DB, Bard F, Vasquez NJ, Yednock T;
 XX
 DR WPI; 2001-032104/04.
 XX
 PT Preventing or treating a disease associated with amyloid deposits,
 PT especially Alzheimer's disease, comprises administering amyloid specific
 PT antibody.
 XX
 PS Disclosure; Page 32; 143pp; English.
 XX
 CC This invention describes a novel method of preventing or treating a
 CC disease associated with amyloid deposits of amyloid precursor protein
 CC (APP) Abeta fragments in the brain of a patient, which comprises
 CC administering to the patient: (a) an antibody that binds to Abeta, the
 CC antibody binds to an amyloid deposit and induces a clearing response (Fc
 CC receptor mediated phagocytosis) against it (b) a polypeptide containing
 CC an N-terminal segment of at least residues 1-5 of Abeta; or (c) an agent
 CC that induces an immunogenic response against residues 1-3 to 7-11 of
 CC Abeta. The products of the invention have neurotropic and neuroprotective
 CC activity. The method is also useful for monitoring a course of treatment
 CC being administered to a patient e.g. active and passive immunization. The
 CC methods are useful for prophylactic and therapeutic treatment of
 CC Alzheimer's disease
 XX
 SQ Sequence 72 AA;
 Query Match 100.0%; Score 112; DB 4; Length 72;
 Best Local Similarity 100.0%; Pred. No. 3.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSWLRVPKVSASHLE 21
 Db |||||
 52 FNNFTVSWLRVPKVSASHLE 72
 RESULT 75
 ADP02897
 ID ADP02897 standard; peptide; 74 AA.
 XX
 AC ADP02897;
 XX
 DT 12-AUG-2004 (first entry)
 XX
 DE Fusion protein #9 for treating neurodegenerative disorder.
 XX
 KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 KW aggregation; brain; immunogenic response; beta-amyloid;
 KW parkinson's disease.
 XX
 OS Synthetic.
 XX

PN WO2004041067-A2.
 XX
 PD 21-MAY-2004.
 XX
 PF 31-OCT-2003; 2003WO-US034527.
 XX
 PR 01-NOV-2002; 2002US-0423012P.
 XX
 PA (ELAN-) ELAN PHARM INC.
 PA (REGC) UNIV CALIFORNIA.
 XX
 PI Schenk DB, Masliah E;
 XX
 DR WPI; 2004-411388/38.
 XX
 PT Preventing or treating disease such as Parkinson's disease characterized
 PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 PT agent that induces immunogenic response against alpha-synuclein and/or
 PT beta-amyloid.
 XX
 PS Disclosure; SEQ ID NO 30; 78pp; English.
 XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.
 XX
 SQ Sequence 74 AA;
 Query Match 100.0%; Score 112; DB 8; Length 74;
 Best Local Similarity 100.0%; Pred. No. 3.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSWLRVPKVSASHLE 21
 Db |||||
 17 FNNFTVSWLRVPKVSASHLE 37
 RESULT 76
 AAR14264
 ID AAR14264 standard; peptide; 77 AA.
 XX
 AC AAR14264;
 XX
 DT 14-JAN-1992 (first entry)
 XX
 DE Immunogenic branched polypeptides for antimalarial vaccines.
 XX
 KW Immunogen; Plasmodium; malaria; lysine; immunoassay.
 XX
 OS Synthetic.
 XX
 PH Key Location/Qualifiers
 FT Region 13...33
 FT /label= T epitope
 FT Modified-site 75
 FT /note= "epsilon amino substituted with the sequence
 FT (NANP)3FNNFTVSWLRVPKVSASHLE (NANP)10K"
 FT Modified-site 76
 FT /note= "epsilon amino substituted with Lys in which alpha
 FT and epsilon amino groups are each substituted with the
 FT sequence (NANP)3FNNFTVSWLRVPKVSASHLE (NANP)10K"
 XX
 PN EP450715-A.

XX PD 09-OCT-1991.
 XX XX
 XX PF 28-MAR-1991; 91EP-00200727.
 XX XX
 XX PR 02-APR-1990; 90IT-00019914.
 XX XX
 XX PA (ENIE) ENIRICERCH SPA.
 XX XX
 XX PI Pessi A, Bianchi E, Corradin G;
 XX XX
 XX DR WPI; 1991-297504/41.
 XX XX
 XX PT New immunogenic branched polypeptide derivs. - used as antigens in enzyme
 XX PT immunoassays and as anti sporozoite vaccines against Plasmodium
 XX PT falciparum.
 XX XX
 XX PS Claim 11; Page 16; 22pp; English.
 XX XX
 CC The peptide is a specific example of highly generic immunogenic
 CC substituted lysines or polylysines having a number n (where n is 1-15) of
 CC L-lysine amino acid residues of alpha and epsilon amide linkage, where
 CC (n-1)/2 of the alpha amino groups and/or (n+1)/2 of the epsilon amino
 CC groups are substituted with polypeptides consisting of one or more
 CC plasmodial B epitopes covalently bound to one or more peptides with an
 CC amino acid sequence corresponding to that of a T epitope such as
 CC FNNFTVSFWLRVVKVSASHLEA or QVIRANSKFIGITE . The branched polypeptides can
 CC be used as immunogens for preparing genetically non-restricted
 CC animalaria vaccines and for determining anti-Plasmodium antibodies in
 CC blood, serum and blood-spot samples. Determination can be effected by
 CC ELISA. See also AAR14261 - AAR14263, AAR14265 and AAR15436
 XX XX
 SQ Sequence 77 AA;

Query Match 100.0%; Score 112; DB 2; Length 77;
 Best Local Similarity 100.0%; Pred. No. 3.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 13 FNNFTVSFWLRVVKVSASHLE 33

RESULT 77
 ADP02915
 ID ADP02915 standard; peptide; 79 AA.

XX AC ADP02915;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #27 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 XX KW aggregation; brain; immunogenic response; beta-amyloid;
 XX KW Parkinson's disease.

XX OS Synthetic.

XX FN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX XX (ELAN-) ELAN PHARM INC.
 XX XX (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX XX
 XX PT Preventing or treating disease such as Parkinson's disease characterized
 XX PT by Lewy bodies or alpha-synuclein aggregation in brain by administering
 XX PT agent that induces immunogenic response against alpha-synuclein and/or
 XX PT beta-amyloid.

XX PS Disclosure; SEQ ID NO 48; 78pp; English.

XX XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in
 CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC or sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX SQ Sequence 79 AA;

Query Match 100.0%; Score 112; DB 8; Length 79;

Best Local Similarity 100.0%; Pred. No. 3.5e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 52 FNNFTVSFWLRVVKVSASHLE 72

RESULT 78

ADP02896

ID ADP02896 standard; peptide; 101 AA.

XX AC ADP02896;

XX DT 12-AUG-2004 (first entry)

XX DE Fusion protein #8 for treating neurodegenerative disorder.

XX KW antiparkinsonian; antibody therapy; Lewy body; alpha-synuclein;
 XX KW aggregation; brain; immunogenic response; beta-amyloid;
 XX KW Parkinson's disease.

XX OS Synthetic.

XX FN WO2004041067-A2.

XX PD 21-MAY-2004.

XX PF 31-OCT-2003; 2003WO-US034527.

XX PR 01-NOV-2002; 2002US-0423012P.

XX XX (ELAN-) ELAN PHARM INC.
 XX XX (REGC) UNIV CALIFORNIA.

XX PI Schenk DB, Masliah E;

XX DR WPI; 2004-411388/38.

XX XX
 CC Preventing or treating disease such as Parkinson's disease characterized
 CC by Lewy bodies or alpha-synuclein aggregation in brain by administering
 CC agent that induces immunogenic response against alpha-synuclein and/or
 CC beta-amyloid.

XX PS Disclosure; SEQ ID NO 29; 78pp; English.

XX XX
 CC The invention relates to a method of preventing (M1) or treating a
 CC disease characterized by Lewy bodies or alpha-synuclein aggregation in

CC the brain, by administering an agent that induces an immunogenic response
 CC against alpha-synuclein and/or beta-amyloid (Abeta) to a patient. (M1) is
 CC useful for preventing or treating a disease such as Parkinson's disease
 CC characterized by Lewy bodies or alpha-synuclein aggregation in the brain,
 CC which involves administering agent that induces immunogenic response
 CC against alpha-synuclein and/or Abeta to a patient, and the administration
 CC improves motor characteristics of the patient. Alpha-synuclein or Abeta
 CC is useful in the manufacture of a preparation for simultaneous, separate
 CC sequential treatment of disease characterized by Lewy bodies or alpha-
 CC synuclein aggregation. This sequence corresponds to a fusion peptide used
 CC in the method of the invention.

XX Sequence 101 AA;

Query Match 100.0%; Score 112; DB 8; Length 101;
 Best Local Similarity 100.0%; Pred. No. 4.7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 45 FNNFTVSFWLRVPKVSASHLE 65

RESULT 79

AAB20149
 ID AAB20149 standard; protein; 109 AA.

XX AC AAB20149;

XX 30-APR-2001 (first entry)

XX Growth differentiation factor 8 AutoVac construct GDF-8 P30-2.

XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.

XX Key Location/Qualifiers
 FT Region 1..48

FT /note= "identical to residues 267-314 of human GDF-8"

FT Region 49..69

FT /note= "tetanus toxoid P2 epitope"

FT Region 70..109

FT /note= "identical to residues 336-375 of human GDF-8"

FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"

FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"

XX WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouriteen S, Klysner S;

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down
 XX regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.

XX

XX Example 1; Page 101-102; 110pp; English.

XX The present sequence is that of AutoVac construct GDF-8 P30-2, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 49-69 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope P30 (see AAB20144). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as P30, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure

XX Sequence 109 AA;

Query Match 100.0%; Score 112; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 5.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 49 FNNFTVSFWLRVPKVSASHLE 69

RESULT 80

AAB20151
 ID AAB20151 standard; protein; 109 AA.

XX AC AAB20151;

XX 30-APR-2001 (first entry)

XX Growth differentiation factor 8 AutoVac construct GDF-8 P30-3B.

XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

XX Homo sapiens.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.

XX Key Location/Qualifiers
 FT Region 1..83

FT /note= "identical to residues 267-349 of human GDF-8"

FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"

FT Region 84..104
 FT /note= "tetanus toxoid P2 epitope"

FT Misc-difference 90..91

FT /note= "optionally replaced by Glu-Gly"

FT Region 105..109

FT /note= "identical to residues 371-375 of human GDF-8"

XX WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.

FT Region 1..20
 FT /note= "identical to residues 267-286 of human GDF-8"
 FT Region 21..41
 FT /note= "tetanus toxoid P2 epitope"
 FT Region 42..109
 FT /note= "identical to residues 307-375 of human GDF-8"
 FT Misc-difference 73
 FT /note= "Cys-73 may be substituted by Ser to avoid
 FT disulfide bond formation"
 FT Misc-difference 90..91
 FT /note= "optionally replaced by Glu-Gly"
 XX
 PN WO200105820-A2.
 XX
 PD 25-JAN-2001.
 XX
 XX 20-JUL-2000; 2000WO-DK000413.
 XX
 XX 20-JUL-1999; 99DK-00001014.
 PR 26-JUL-1999; 99US-0145275P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Halkier T, Mouritsen S, Klysner S;
 XX WPI; 2001-112680/12.
 DR
 XX
 XX Increasing the muscle mass of animals used in meat production by down
 FT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 FT through induction of anti-GDF-8 antibody production.
 XX

Example 1; Page 99; 110pp; English.

XX The present sequence is that of AutoVac construct GDF-8 P30-1, comprising
 CC the 109 C-terminal amino acid residues of human growth differentiation
 CC factor 8 (GDF-8) in which residues 21-41 are replaced by the promiscuous
 CC tetanus toxin T-cell epitope p30 (see AAB20144). It is an object of the
 CC invention to produce a recombinant therapeutic vaccine that is capable of
 CC effecting down-regulation of GDF-8 in order to increase the muscle growth
 CC rate of farm animals. The vaccines (see AAB20145-53) are capable of
 CC breaking autotolerance against autologous GDF-8. They comprise the C-
 CC terminal portion of human GDF-8 in which a portion of the native sequence
 CC is replaced by a T-cell epitope such as p30, with minimal disturbance of
 CC the authentic 3-dimensional structure of the protein. Nucleic acids
 CC encoding the GDF-8 variants can be used for genetic immunisation of the
 CC animals. Down-regulation of GDF-8 activity can increase muscle mass by up
 CC to at least 45% in cattle, pigs and poultry used for meat production,
 CC reducing the need for antibiotic feed-additives. Anti-GDF8 vaccines can
 CC be used to treat human diseases such as cancer cachexia where muscle
 CC atrophy is pronounced and for patients suffering from acute and chronic
 CC heart failure
 XX

SQ Sequence 109 AA;
 Query Match 100.0%; Score 112; DB 4; Length 109;
 Best Local Similarity 100.0%; Pred. No. 5.1e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 |||||

RESULT 83
 ADL63984
 ID ADL63984 standard; protein; 121 AA.
 XX

AC ADL63984;

XX 03-JUN-2004 (first entry)

DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 11.
 XX

KW human; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30.
 XX

OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers
 FT Peptide 74..94
 FT /note= "Tetanus P30 peptide"
 XX

PN WO2004019974-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003703.

XX 30-AUG-2002; 2002GB-00020212.

PR 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.
 PA (ASHW/) ASHMAN C.

XX Ashman C, Ellis JH;
 PI

XX WPI; 2004-239121/22.

XX New immunogenic composition comprising an interleukin-13 (IL-13) element
 FT that drives an immune response recognizing human IL-13 and foreign T-cell
 FT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 XX

PS Disclosure; SEQ ID NO 11; 89pp; English.

CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric human IL-13 protein containing a tetanus p30
 CC peptide (immunogen 2) of the invention.
 XX

SQ Sequence 121 AA;

Query Match 100.0%; Score 112; DB 8; Length 121;
 Best Local Similarity 100.0%; Pred. No. 5.7e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 74 FNNFTVSFWLRVPKVSASHLE 94
 |||||

RESULT 84
 ADL63908
 ID ADL63908 standard; protein; 121 AA.
 XX
 XX ADL63908;
 XX

```

DT 03-JUN-2004 (first entry)
XX Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 11.
DE human; immunogenic; IL-13; interleukin-13; vaccine;
XX airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30.
XX
OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Peptide 74..94
FT /note= "Tetanus P30 peptide"
XX
FN WO2004019975-A2.
XX
PD 11-MAR-2004.
XX
PF 28-AUG-2003; 2003WO-GB003729.
XX
PR 30-AUG-2002; 2002GB-00020211.
PR 28-FEB-2003; 2003GB-00004672.
XX
PA (GLAX ) GLAXO GROUP LTD.
XX
PI Ellis JH, Ashman C;
XX WPI; 2004-239122/22.
XX
PT New vaccine composition useful for treating asthma, Chronic obstructive
PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
PT immunogen generating an immune response against interleukin-13.
XX
PS Disclosure; SEQ ID NO 11; 89pp; English.
XX
CC This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric human IL-13 protein containing a tetanus p30
CC peptide (immunogen 2) of the invention.
XX
SQ Sequence 121 AA;
Query Match 100.0%; Score 112; DB 8; Length 121;
Best Local Similarity 100.0%; Pred. No. 5.7e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 74 FNNFTVSFWLRVPKVSASHLE 94

RESULT 85
ADL97891
ID ADL97891 standard; protein; 121 AA.

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XX AC ADL97891;
XX
XX 03-JUN-2004 (first entry)
XX
DE Human IL-13/tetanus toxin p30 epitope immunogen 2, SEQ ID NO:11.
XX
KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
KW respiratory; anti-allergic; dermatological; human; T-helper epitope;
KW tetanus toxin; p30; mutant; mutein.
XX
OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX
FH Key Location/Qualifiers
FT Region 74..94
FT /note= "Tetanus toxin p30 epitope"
XX
FN WO2004019979-A2.
XX
PD 11-MAR-2004.
XX
PF 28-AUG-2003; 2003WO-GB003721.
XX
PR 30-AUG-2002; 2002GB-00020211.
PR 28-FEB-2003; 2003GB-00004672.
XX
PA (GLAX ) GLAXO GROUP LTD.
XX
PI Ellis JH, Ashman C;
XX WPI; 2004-239126/22.
XX
PT Vaccine composition useful for treating asthma, Chronic Obstructive
PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises
PT immunogen generating an immune response against interleukin-13.
XX
PS Disclosure; SEQ ID NO 11; 45pp; English.
XX
CC The invention relates to a vaccine composition for treating asthma or
CC COPD (chronic obstructive pulmonary disease). The vaccine composition
CC comprises an immunogen that is capable of generating an immune response
CC against self interleukin-13 (IL-13) and an adjuvant composition
CC comprising a combination of an immunostimulatory oligonucleotide
CC containing at least one unmethylated CG motif and a saponin. The IL-13
CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
CC epitopes, or is a non-human IL-13 backbone substituted with human IL-13
CC epitopes. The vaccine composition is useful for treating asthma or COPD,
CC or atopic disorders such as hayfever, contact allergies or dermatitis.
CC The present sequence represents a human IL-13/tetanus toxin p30 epitope
CC immunogen of the invention.
XX
SQ Sequence 121 AA;
Query Match 100.0%; Score 112; DB 8; Length 121;
Best Local Similarity 100.0%; Pred. No. 5.7e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB 74 FNNFTVSFWLRVPKVSASHLE 94

RESULT 86
AAB45524
ID AAB45524 standard; protein; 122 AA.
XX
AC AAB45524;
XX
XX 26-FEB-2001 (first entry)
XX

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```

XX DE . Modified murine interleukin-5 SEQ ID NO: 48.
XX
XX
XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
XX OS Mus musculus.
XX OS Clostridium tetani.
XX
XX PN WO200065058-A1.
XX
XX PD 02-NOV-2000.
XX
XX PF 19-APR-2000; 2000WO-DK000205.
XX
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX
XX PA (MEBI-) M & E BIOTECH AS.
XX
XX PI Klysner S;
XX
XX DR WPI; 2000-672791/65.
XX
XX
XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
XX PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
XX PT amelioration of asthma or other chronic allergic conditions.
XX
XX PS Example 7; Page 156; 172pp; English.
XX
XX CC The present invention is concerned with methods of treating asthma,
XX CC eosinophilia, allergic rhinitis and other allergic diseases. These
XX CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
XX CC proteins and their coding sequences to down-regulate IL-5 activity and
XX CC thus reduce eosinophil numbers. The allergic diseases may be treated
XX CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
XX CC it is possible that they may be used in the treatment of cancer and
XX CC helminthic infections
XX
XX SQ Sequence 122 AA;
XX
XX Query Match 100.0%; Score 112; DB 3; Length 122;
XX Best Local Similarity 100.0%; Pred. No. 5.8e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db ||||| ||||| ||||| ||||| |||||
XX 30 FNNFTVSFWLRVPKVSASHLE 50
XX
XX RESULT 87
XX ADL63986
XX ID ADL63986 standard; protein; 122 AA.
XX
XX AC ADL63986;
XX
XX DT 03-JUN-2004 (first entry)
XX
XX DE Chimeric human IL-13 protein with a tetanus toxin p30 peptide SeqID 13.
XX
XX KW human; immunogenic; IL-13; interleukin-13; vaccine;
XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX KW chimeric; tetanus p30.
XX
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX
XX OS Chimeric.
XX
XX PH Key Location/Qualifiers
XX FT Peptide 77.97
XX FT /note= "Tetanus P30 peptide"
XX
XX PN WO2004019974-A2.
XX
XX PD 11-MAR-2004.
XX
XX PF 28-AUG-2003; 2003WO-GB003703.
XX
XX PR 30-AUG-2002; 2002GB-00020212.
XX PR 28-FEB-2003; 2003GB-00004672.
XX
XX PA (GLAX ) GLAXO GROUP LTD.
XX PA (ASHW/) ASHMAN C.
XX
XX PI Ashman C, Ellis JH;

```


XX DR WPI; 2004-239121/22.

XX PT New immunogenic composition comprising an interleukin-13 (IL-13) element

XX PT that drives an immune response recognizing human IL-13 and foreign T-cell

XX PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.

XX PS Disclosure; SEQ ID NO 13; 89pp; English.

XX CC This invention relates to a novel immunogenic composition comprising an

XX CC IL-13 (interleukin-13) element that is capable of driving an immune

XX CC response by recognising human IL-13 and one or more foreign T-cell

XX CC epitopes. Specifically, it refers to a method for producing a human

XX CC chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX CC a human vaccine. The present invention describes human chimeric IL-13

XX CC sequences as having a similar conformational shape to native human IL-13

XX CC while having sufficient amino acid sequence diversity, attributable to

XX CC non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX CC the method results in a reduction in airway hyper-responsiveness (AHR),

XX CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX CC the airways and skin irritation, as well as reducing the requirement for

XX CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX CC dermatological and antiasthmatic activities, can be used via gene therapy

XX CC to treat individuals suffering from or susceptible to chronic obstructive

XX CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX CC sequence is the chimeric human IL-13 protein containing a tetanus p30

XX CC peptide (immunogen 4) of the invention.

XX SQ Sequence 123 AA;

Query Match 100.0%; Score 112; DB 8; Length 123;

Best Local Similarity 100.0%; Pred. No. 5.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 77 FNNFTVSFWLRVPKVSASHLE 97

RESULT 89

ADL63910

ID ADL63910 standard; protein; 123 AA.

XX AC ADL63910;

XX DT 03-JUN-2004 (first entry)

XX DE Chimeric human IL-13 protein with a tetanus toxin p30 peptide SeqID 13.

XX KW human; immunogenic; IL-13; interleukin-13; vaccine;

XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;

XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;

XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;

XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;

XX KW chimeric; tetanus p30.

XX OS Homo sapiens.

XX OS Clostridium tetani.

XX OS Chimeric.

XX FH Key Location/Qualifiers

XX FT Peptide 77..97

XX FT /note= "Tetanus p30 peptide"

XX FN WO2004019975-A2.

XX PD 11-MAR-2004.

XX PF 28-AUG-2003; 2003WO-GB003729.

XX PR 30-AUG-2002; 2002GB-00020211.

XX PR 28-FEB-2003; 2003GB-00004672.

XX XX

PA (GLAX) GLAXO GROUP LTD.

XX PI Ellis JH, Ashman C;

XX DR WPI; 2004-239122/22.

XX PT New vaccine composition useful for treating asthma, Chronic obstructive

XX PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an

XX PT immunogen generating an immune response against interleukin-13.

XX PS Disclosure; SEQ ID NO 13; 89pp; English.

XX CC This invention relates to a novel immunogenic composition comprising an

XX CC IL-13 (interleukin-13) element that is capable of driving an immune

XX CC response by recognising human IL-13 and one or more foreign T-cell

XX CC epitopes. Specifically, it refers to a method for producing a human

XX CC chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX CC a human vaccine. The present invention describes human chimeric IL-13

XX CC sequences as having a similar conformational shape to native human IL-13

XX CC while having sufficient amino acid sequence diversity, attributable to

XX CC non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX CC the method results in a reduction in airway hyper-responsiveness (AHR),

XX CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX CC the airways and skin irritation, as well as reducing the requirement for

XX CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX CC dermatological and antiasthmatic activities, can be used via gene therapy

XX CC to treat individuals suffering from or susceptible to chronic obstructive

XX CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX CC sequence is the chimeric human IL-13 protein containing a tetanus p30

XX CC peptide (immunogen 4) of the invention.

XX SQ Sequence 123 AA;

Query Match 100.0%; Score 112; DB 8; Length 123;

Best Local Similarity 100.0%; Pred. No. 5.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 77 FNNFTVSFWLRVPKVSASHLE 97

RESULT 90

ADL97893

ID ADL97893 standard; protein; 123 AA.

XX AC ADL97893;

XX DT 03-JUN-2004 (first entry)

XX DE Murine IL-13/tetanus toxin P30 epitope immunogen 4, SEQ ID NO:13.

XX KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;

XX KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;

XX KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;

XX KW respiratory; antiallergic; dermatological; mouse; murine;

XX KW T-helper epitope; tetanus toxin; P30; mutant; mutein.

XX OS Mus sp.

XX OS Clostridium tetani.

XX OS Chimeric.

XX FH Key Location/Qualifiers

XX FT Region 77..97

XX FT /note= "Tetanus toxin P30 epitope"

XX FN WO2004019979-A2.

XX PD 11-MAR-2004.

XX PF 28-AUG-2003; 2003WO-GB003721.

XX PR 30-AUG-2002; 2002GB-00020211.

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PR 28-FEB-2003; 2003GB-00004672.
XX
PA (GLAX ) GLAXO GROUP LTD.
XX
PI Ellis JH, Ashman C;
XX
DR WPI; 2004-239126/22.
XX
PT Vaccine composition useful for treating asthma, Chronic Obstructive
PT Pulmonary Disease or atopic disorders, e.g. Dermatitis, comprises
PT immunogen generating an immune response against interleukin-13.
XX
XX
PS Disclosure; SEQ ID NO 13; 45pp; English.
XX
XX
CC The invention relates to a vaccine composition for treating asthma or
CC COPD (chronic obstructive pulmonary disease). The vaccine composition
CC comprises an immunogen that is capable of generating an immune response
CC against self interleukin-13 (IL-13) and an adjuvant composition
CC comprising a combination of an immunostimulatory oligonucleotide
CC containing at least one unmethylated CG motif and a saponin. The IL-13
CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
CC epitopes, or is a non-human IL-13 backbone substituted with human IL-13
CC epitopes. The vaccine composition is useful for treating asthma or COPD,
CC or atopic disorders such as hayfever, contact allergies or dermatitis.
CC The present sequence represents a murine IL-13/tetanus toxin P30 epitope
CC immunogen of the invention.
XX
XX
SQ Sequence 123 AA;

Query Match 100.0%; Score 112; DB 8; Length 123;
Best Local Similarity 100.0%; Pred. No. 5.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB |||||
77 FNNFTVSFWLRVPKVSASHLE 97

RESULT 91
AAB45496
ID AAB45496 standard; protein; 124 AA.
XX
AC AAB45496;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified human interleukin-5 SEQ ID NO: 8.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Homo sapiens.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
DR N-PSDB; AAC68868.
XX
PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX
PS Example 7; Page 141; 172pp; English.
XX
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX
SQ Sequence 124 AA;

Query Match 100.0%; Score 112; DB 3; Length 124;
Best Local Similarity 100.0%; Pred. No. 5.9e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB |||||
32 FNNFTVSFWLRVPKVSASHLE 52

RESULT 92
AAB45515
ID AAB45515 standard; protein; 124 AA.
XX
AC AAB45515;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified human interleukin-5 SEQ ID NO: 30.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Homo sapiens.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
DR N-PSDB; AAC68868.
XX
PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
XX
PS Example 7; Page 141; 172pp; English.
XX
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
XX
SQ Sequence 124 AA;

Query Match 100.0%; Score 112; DB 3; Length 124;
Best Local Similarity 100.0%; Pred. No. 5.9e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
DB |||||
32 FNNFTVSFWLRVPKVSASHLE 52

```

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 32 FNNFTVSFWLRVPKVSASHLE 52

RESULT 93

AAB45529
 ID AAB45529 standard; protein; 128 AA.

XX AC AAB45529;

XX DT 26-FEB-2001 (first entry)

XX DE Modified murine interleukin-5 SEQ ID NO: 58.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Mus musculus.

XX OS Clostridium tetani.

XX XX WO200065058-A1.

XX PD 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Klynsner S;

XX DR WPI; 2000-672791/65.

XX DR N-PSDB; AAC68882.

XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 6; Page 164-165; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 128 AA;

Query Match 100.0%; Score 112; DB 3; Length 128;

Best Local Similarity 100.0%; Pred. No. 6.1e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 84 FNNFTVSFWLRVPKVSASHLE 104

RESULT 94

AAB45525
 ID AAB45525 standard; protein; 128 AA.

XX AC AAB45525;

XX DT 26-FEB-2001 (first entry)

DE Modified murine interleukin-5 SEQ ID NO: 50.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Mus musculus.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX PD 02-NOV-2000.

XX XX 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

XX PR 06-MAY-1999; 99US-0132811P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Klynsner S;

XX DR WPI; 2000-672791/65.

XX DR N-PSDB; AAC68878.

XX PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.

XX PS Example 3; Page 158; 172pp; English.

XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections

XX SQ Sequence 128 AA;

Query Match 100.0%; Score 112; DB 3; Length 128;

Best Local Similarity 100.0%; Pred. No. 6.1e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 57 FNNFTVSFWLRVPKVSASHLE 77

RESULT 95

AAB45508

ID AAB45508 standard; protein; 128 AA.

XX AC AAB45508;

XX DT 26-FEB-2001 (first entry)

XX DE Modified murine interleukin-5 SEQ ID NO: 20.

XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.

XX OS Mus musculus.

XX OS Clostridium tetani.

XX PN WO200065058-A1.

XX PD 02-NOV-2000.

XX PF 19-APR-2000; 2000WO-DK000205.

XX PR 23-APR-1999; 99DK-00000552.

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PR 06-MAY-1999; 99US-0132811P.
PA (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 8; Page 135; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX Sequence 128 AA;
Query Match 100.0%; Score 112; DB 3; Length 128;
Best Local Similarity 100.0%; Pred. No. 6.1e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 57 FNNFTVSFWLRVPKVSASHLE 77

RESULT 96
AAB45506
ID AAB45506 standard; protein; 130 AA.
XX
AC AAB45506;
XX
DT 26-FEB-2001 (first entry)
XX Modified murine interleukin-5 SEQ ID NO: 18.
DE Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX Homo sapiens.
OS Clostridium tetani.
XX WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 6; Page 133; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These

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CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX Sequence 130 AA;
Query Match 100.0%; Score 112; DB 3; Length 130;
Best Local Similarity 100.0%; Pred. No. 6.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 85 FNNFTVSFWLRVPKVSASHLE 105

RESULT 97
AAB45497
ID AAB45497 standard; protein; 130 AA.
XX
AC AAB45497;
XX
DT 26-FEB-2001 (first entry)
XX Modified human interleukin-5 SEQ ID NO: 9.
DE Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX Homo sapiens.
OS Clostridium tetani.
XX WO200065058-A1.
XX PD 02-NOV-2000.
XX PF 19-APR-2000; 2000WO-DK000205.
XX PR 23-APR-1999; 99DK-00000552.
XX PR 06-MAY-1999; 99US-0132811P.
XX PA (MEBI-) M & E BIOTECH AS.
XX Klysner S;
XX WPI; 2000-672791/65.
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX Example 8; Page 125; 172pp; English.
XX The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX Sequence 130 AA;
Query Match 100.0%; Score 112; DB 3; Length 130;
Best Local Similarity 100.0%; Pred. No. 6.2e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 59 FNNFTVSFWLRVPKVSASHLE 79

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RESULT 98
 AAB45509
 ID AAB45509 standard; protein; 130 AA.
 XX AC AAB45509;
 XX DT 26-FEB-2001 (first entry)
 XX DE Modified murine interleukin-5 SEQ ID NO: 21.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Mus musculus.
 XX OS Clostridium tetani.
 XX FN WO200065058-A1.
 XX XX 02-NOV-2000.
 XX PF 19-APR-2000; 2000WO-DK000205.
 XX PR 23-APR-1999; 99DK-00000552.
 XX PR 06-MAY-1999; 99US-0132811P.
 XX PA (MEBI-) M & E BIOTECH AS.
 XX PI Klysner S;
 XX DR WPI; 2000-672791/65.
 XX XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 amelioration of asthma or other chronic allergic conditions.
 XX PS Example 9; Page 136; 172pp; English.
 XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX SQ Sequence 130 AA;
 Query Match 100.0%; Score 112; DB 3; Length 130;
 Best Local Similarity 100.0%; Pred. No. 6.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 108 FNNFTVSFWLRVPKVSASHLE 128
 RESULT 99
 AAB45516
 ID AAB45516 standard; protein; 130 AA.
 XX AC AAB45516;
 XX DT 26-FEB-2001 (first entry)
 XX DE Modified human interleukin-5 SEQ ID NO: 32.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Homo sapiens.

Clostridium tetani.
 OS XX WO200065058-A1.
 PN XX 02-NOV-2000.
 PD XX 19-APR-2000; 2000WO-DK000205.
 PF XX 23-APR-1999; 99DK-00000552.
 PR XX 06-MAY-1999; 99US-0132811P.
 XX XX (MEBI-) M & E BIOTECH AS.
 PA XX Klysner S;
 PI XX WPI; 2000-672791/65.
 DR XX N-PSDB; AAC68869.
 XX XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 amelioration of asthma or other chronic allergic conditions.
 XX PS Disclosure; Page 142-143; 172pp; English.
 XX CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX SQ Sequence 130 AA;
 Query Match 100.0%; Score 112; DB 3; Length 130;
 Best Local Similarity 100.0%; Pred. No. 6.2e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 59 FNNFTVSFWLRVPKVSASHLE 79
 RESULT 100
 AAB45528
 ID AAB45528 standard; protein; 130 AA.
 XX AC AAB45528;
 XX DT 26-FEB-2001 (first entry)
 XX DE Modified murine interleukin-5 SEQ ID NO: 56.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Mus musculus.
 OS OS Clostridium tetani.
 XX FN WO200065058-A1.
 XX XX 02-NOV-2000.
 XX PF 19-APR-2000; 2000WO-DK000205.
 XX PR 23-APR-1999; 99DK-00000552.
 XX PR 06-MAY-1999; 99US-0132811P.
 XX XX (MEBI-) M & E BIOTECH AS.
 PA XX Klysner S;
 PI XX

ID AAB45520 standard; protein; 132 AA.
 AC AAB45520;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified human interleukin-5 SEQ ID NO: 40.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 XX
 FN WO200065058-A1.
 XX
 PD 02-NOV-2000.
 XX
 PF 19-APR-2000; 2000WO-DK000205.
 XX
 PR 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Klysner S;
 XX
 DR WPI; 2000-672791/65.
 DR N-PSDB; RAC68873.
 XX
 XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 PS Example 6; Page 149; 172pp; English.
 XX
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 132 AA;
 Query Match 100.0%; Score 112; DB 3; Length 132;
 Best Local Similarity 100.0%; Pred. No. 6.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 88 FNNFTVSFWLRVPKVSASHLE 108
 RESULT 104
 AAB45495
 ID AAB45495 standard; protein; 132 AA.
 AC AAB45495;
 XX
 DT 26-FEB-2001 (first entry)
 XX
 DE Modified human interleukin-5 SEQ ID NO: 7.
 XX
 KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 XX
 FN WO200065058-A1.

XX 02-NOV-2000.
 XX
 PD 19-APR-2000; 2000WO-DK000205.
 PF
 XX
 PR 23-APR-1999; 99DK-00000552.
 PR 06-MAY-1999; 99US-0132811P.
 XX
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX
 PI Klysner S;
 XX
 DR WPI; 2000-672791/65.
 XX
 PT Down-regulating interleukin 5 (IL-5) activity in humans by administering
 PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 PT amelioration of asthma or other chronic allergic conditions.
 XX
 PS Example 6; Page 123-124; 172pp; English.
 XX
 CC The present invention is concerned with methods of treating asthma,
 CC eosinophilia, allergic rhinitis and other allergic diseases. These
 CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 CC proteins and their coding sequences to down-regulate IL-5 activity and
 CC thus reduce eosinophil numbers. The allergic diseases may be treated
 CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 CC it is possible that they may be used in the treatment of cancer and
 CC helminthic infections
 XX
 SQ Sequence 132 AA;
 Query Match 100.0%; Score 112; DB 3; Length 132;
 Best Local Similarity 100.0%; Pred. No. 6.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 87 FNNFTVSFWLRVPKVSASHLE 107
 RESULT 105
 ADL63987
 ID ADL63987 standard; protein; 132 AA.
 XX
 AC ADL63987;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 14.
 XX
 KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; murine.
 XX
 OS Clostridium tetani.
 OS Mus sp.
 OS Chimeric.
 XX
 XX Key Location/Qualifiers
 FT Peptide 1..21 /note= "Tetanus P30 peptide"
 FT
 XX WO2004019974-A2.
 -PN
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003703.
 PF
 XX 30-AUG-2002; 2002GB-00020212.
 XX
 PR 28-FEB-2003; 2003GB-00004672.

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XX (GLAX ) GLAXO GROUP LTD.
PA (ASHM/) ASHMAN C.
XX
XX
XX Ashman C, Ellis JH;
XX WPI; 2004-239121/22.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
PT that drives an immune response recognizing human IL-13 and foreign T-cell
PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 14; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric murine IL-13 protein containing a tetanus p30
CC peptide (immunogen 5) of the invention.
XX
XX Sequence 132 AA;
XX
XX Query Match 100.0%; Score 112; DB 8; Length 132;
XX Best Local Similarity 100.0%; Pred. No. 6.3e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 1 FNNFTVSFWLRVPKVSASHLE 21
XX
XX RESULT 106
XX ADL63988
XX ID ADL63988 standard; protein; 132 AA.
XX
XX AC ADL63988;
XX
XX 03-JUN-2004 (first entry)
XX
XX Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 15.
XX
XX mouse; immunogenic; IL-13; interleukin-13; vaccine;
XX airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX chimeric; tetanus p30; murine.
XX
XX Clostridium tetani.
XX Mus sp.
XX Chimeric.
XX Synthetic.
XX
XX Key Location/Qualifiers
XX Peptide 1..21
XX /note= "Tetanus P30 peptide"
XX
XX Misc-difference 32
XX /note= "Wild type Leu substituted for Val"
XX
XX Misc-difference 42
XX /note= "Wild type Ser substituted for Thr"
XX

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```

FT Misc-difference 84 /note= "Wild type Tyr substituted for Phe"
FT Misc-difference 92 /note= "Wild type Gly substituted for Ala"
FT Misc-difference 121 /note= "Wild type Ser substituted for Thr"
FT Misc-difference 123 /note= "Wild type Gln substituted for Asn"
FT Misc-difference 129 /note= "Wild type His substituted for Arg"
XX
XX WO2004019974-A2.
XX
XX 11-MAR-2004.
XX
XX 28-AUG-2003; 2003WO-GB003703.
XX
XX 30-AUG-2002; 2002GB-00020212.
XX 28-FEB-2003; 2003GB-00004672.
XX
XX (GLAX ) GLAXO GROUP LTD.
XX (ASHM/) ASHMAN C.
XX
XX Ashman C, Ellis JH;
XX WPI; 2004-239121/22.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
XX that drives an immune response recognizing human IL-13 and foreign T-cell
XX epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 15; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric murine IL-13 protein with humanised amino acid
CC substitutions containing a tetanus p30 peptide (immunogen 6) of the
CC invention.
XX
XX Sequence 132 AA;
XX
XX Query Match 100.0%; Score 112; DB 8; Length 132;
XX Best Local Similarity 100.0%; Pred. No. 6.3e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 1 FNNFTVSFWLRVPKVSASHLE 21
XX
XX RESULT 107
XX ADL63912
XX ID ADL63912 standard; protein; 132 AA.
XX
XX AC ADL63912;
XX
XX 03-JUN-2004 (first entry)
XX
XX Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 15.
XX

```


XX mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; murine.

XX Clostridium tetani.

OS Mus sp.

OS Chimeric.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide 1..21

FT /note= "Tetanus P30 peptide"

FT Misc-difference 32 /note= "Wild type Leu substituted for Val"

FT Misc-difference 42 /note= "Wild type Ser substituted for Thr"

FT Misc-difference 84 /note= "Wild type Tyr substituted for Phe"

FT Misc-difference 92 /note= "Wild type Gly substituted for Ala"

FT Misc-difference 121 /note= "Wild type Ser substituted for Thr"

FT Misc-difference 125 /note= "Wild type Gln substituted for Asn"

FT Misc-difference 129 /note= "Wild type His substituted for Arg"

FT /note= "Wild type His substituted for Arg"

XX WO2004019975-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003729.

XX 30-AUG-2002; 2002GB-00020211.

XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.

XX Ellis JH, Ashman C;

XX WPI; 2004-239122/22.

XX New vaccine composition useful for treating asthma, Chronic obstructive

XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an

XX immunogen generating an immune response against interleukin-13.

XX Disclosure; SEQ ID NO 15; 89pp; English.

XX This invention relates to a novel immunogenic composition comprising an

XX IL-13 (interleukin-13) element that is capable of driving an immune

XX response by recognising human IL-13 and one or more foreign T-cell

XX epitopes. Specifically, it refers to a method for producing a human

XX chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX a human vaccine. The present invention describes human chimeric IL-13

XX sequences as having a similar conformational shape to native human IL-13

XX while having sufficient amino acid sequence diversity, attributable to

XX non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX the method results in a reduction in airway hyper-responsiveness (AHR),

XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX the airways and skin irritation, as well as reducing the requirement for

XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX dermatological and antiasthmatic activities, can be used via gene therapy

XX to treat individuals suffering from or susceptible to chronic obstructive

XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX sequence is the chimeric murine IL-13 protein with humanised amino acid

XX substitutions containing a tetanus p30 peptide (immunogen 6) of the

XX invention.

XX Sequence 132 AA;

Query Match 100.0%; Score 112; DB 8; Length 132;
 Best Local Similarity 100.0%; Pred. No. 6.3e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPRKVSASHLE 21

|||||

Db 1 FNNFTVSFWLRVPRKVSASHLE 21

|||||

RESULT 108

ADL63911

ID ADL63911 standard; protein; 132 AA.

XX AC ADL63911;

XX DT 03-JUN-2004 (first entry)

XX DE Chimeric murine IL-13 protein with tetanus toxin p30 peptide SeqID 14.

XX KW mouse; immunogenic; IL-13; interleukin-13; vaccine;

XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;

XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;

XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;

XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;

XX KW chimeric; tetanus p30; murine.

XX OS Clostridium tetani.

OS Mus sp.

OS Chimeric.

XX Key Location/Qualifiers

FT Peptide 1..21

FT /note= "Tetanus P30 peptide"

XX WO2004019975-A2.

XX 11-MAR-2004.

XX 28-AUG-2003; 2003WO-GB003729.

XX 30-AUG-2002; 2002GB-00020211.

XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.

XX Ellis JH, Ashman C;

XX WPI; 2004-239122/22.

XX New vaccine composition useful for treating asthma, Chronic obstructive

XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an

XX immunogen generating an immune response against interleukin-13.

XX Disclosure; SEQ ID NO 14; 89pp; English.

XX This invention relates to a novel immunogenic composition comprising an

XX IL-13 (interleukin-13) element that is capable of driving an immune

XX response by recognising human IL-13 and one or more foreign T-cell

XX epitopes. Specifically, it refers to a method for producing a human

XX chimeric IL-13 immunogen formulated in an appropriate manner to generate

XX a human vaccine. The present invention describes human chimeric IL-13

XX sequences as having a similar conformational shape to native human IL-13

XX while having sufficient amino acid sequence diversity, attributable to

XX non-human mammalian species, to enhance its immunogenicity. Accordingly,

XX the method results in a reduction in airway hyper-responsiveness (AHR),

XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of

XX the airways and skin irritation, as well as reducing the requirement for

XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit

XX dermatological and antiasthmatic activities, can be used via gene therapy

XX to treat individuals suffering from or susceptible to chronic obstructive

XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide

XX sequence is the chimeric murine IL-13 protein containing a tetanus p30

XX sequence 132 AA;

CC peptide (immunogen 5) of the invention.

XX Sequence 132 AA;

Query Match 100.0%; Score 112; DB 8; Length 132;

Best Local Similarity 100.0%; Pred. No. 6.3e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 109

ADL97894

ID ADL97894 standard; protein; 132 AA.

XX

AC ADL97894;

XX

DT 03-JUN-2004 (first entry)

XX

DE Murine IL-13/tetanus toxin P30 epitope immunogen 5, SEQ ID NO:14.

XX

KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin; asthma; chronic obstructive pulmonary disease; COPD; atopic disorder; hayfever; contact allergy; dermatitis; vaccine; antiasthmatic; respiratory; antiallergic; dermatological; mouse; murine; T-helper epitope; tetanus toxin; P30; mutant; mutein.

XX

OS Mus sp.

OS Clostridium tetani.

OS Chimeric.

XX

Key Location/Qualifiers

FT Region

FT 1..21

FT /note= "Tetanus toxin P30 epitope"

XX

PN WO2004019979-A2.

XX

PD 11-MAR-2004.

XX

PF 28-AUG-2003; 2003WO-GB003721.

XX

PR 30-AUG-2002; 2002GB-00020211.

XX

PR 28-FEB-2003; 2003GB-00004672.

XX

PA (GLAX) GLAXO GROUP LTD.

XX

PI Ellis JH, Ashman C;

XX

DR WPI; 2004-239126/22.

XX

XX Disclosure; SEQ ID NO 14; 45pp; English.

XX

CC The invention relates to a vaccine composition for treating asthma or COPD (chronic obstructive pulmonary disease). The vaccine composition comprises an immunogen that is capable of generating an immune response against self interleukin-13 (IL-13) and an adjuvant composition comprising a combination of an immunostimulatory oligonucleotide containing at least one unmethylated CG motif and a saponin. The IL-13 immunogen is preferably a human IL-13 backbone substituted with foreign T-helper epitopes, or is a non-human IL-13 backbone substituted with human IL-13 epitopes. The vaccine composition is useful for treating asthma or COPD, or atopic disorders such as hayfever, contact allergies or dermatitis. The present sequence represents a murine IL-13/tetanus toxin P30 epitope immunogen of the invention.

XX

SQ Sequence 132 AA;

XX

Query Match 100.0%; Score 112; DB 8; Length 132;

Best Local Similarity 100.0%; Pred. No. 6.3e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 110

ADL97895

ID ADL97895 standard; protein; 132 AA.

XX

AC ADL97895;

XX

DT 03-JUN-2004 (first entry)

XX

DE Chimeric IL-13/tetanus toxin P30 epitope immunogen 6, SEQ ID NO:15.

XX

KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin; asthma; chronic obstructive pulmonary disease; COPD; atopic disorder; hayfever; contact allergy; dermatitis; vaccine; antiasthmatic; respiratory; antiallergic; dermatological; human; mouse; murine; T-helper epitope; tetanus toxin; P30; mutant; mutein.

XX

OS Homo sapiens.

OS Mus sp.

OS Clostridium tetani.

OS Chimeric.

XX

Key Location/Qualifiers

FT Region

FT 1..21

FT /note= "Tetanus toxin P30 epitope"

XX

PN WO2004019979-A2.

XX

PD 11-MAR-2004.

XX

PF 28-AUG-2003; 2003WO-GB003721.

XX

PR 30-AUG-2002; 2002GB-00020211.

XX

PR 28-FEB-2003; 2003GB-00004672.

XX

PA (GLAX) GLAXO GROUP LTD.

XX

PI Ellis JH, Ashman C;

XX

DR WPI; 2004-239126/22.

XX

XX Disclosure; SEQ ID NO 15; 45pp; English.

XX

CC The invention relates to a vaccine composition for treating asthma or COPD (chronic obstructive pulmonary disease). The vaccine composition comprises an immunogen that is capable of generating an immune response against self interleukin-13 (IL-13) and an adjuvant composition comprising a combination of an immunostimulatory oligonucleotide containing at least one unmethylated CG motif and a saponin. The IL-13 immunogen is preferably a human IL-13 backbone substituted with foreign T-helper epitopes, or is a non-human IL-13 backbone substituted with human IL-13 epitopes. The vaccine composition is useful for treating asthma or COPD, or atopic disorders such as hayfever, contact allergies or dermatitis. The present sequence represents a chimeric IL-13 (comprising the human IL-13 with murine IL-13 B-cell epitopes)/tetanus toxin P30 epitope immunogen of the invention.

XX

SQ Sequence 132 AA;

XX

Query Match 100.0%; Score 112; DB 8; Length 132;

Best Local Similarity 100.0%; Pred. No. 6.3e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 1 FNNFTVSFWLRVPKVSASHLE 21

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21
Best Local Similarity 100.0%; Score 112; DB 8; Length 133;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 111
ADL63985
ID ADL63985 standard; protein; 133 AA.
XX AC ADL63985;
XX DT 03-JUN-2004 (first entry)
XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 12.
XX KW human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30.
XX OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
XX FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Tetanus P30 peptide"
XX WO2004019974-A2.
XX 11-MAR-2004.
XX 28-AUG-2003; 2003WO-GB003703.
XX 30-AUG-2002; 2002GB-00020212.
XX 28-FEB-2003; 2003GB-00004672.
XX (GLAXO) GLAXO GROUP LTD.
XX (ASHM/) ASHMAN C.
XX Ashman C, Ellis JH;
XX WPI; 2004-239121/22.
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
FT that drives an immune response recognizing human IL-13 and foreign T-cell
FT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX Disclosure; SEQ ID NO 12; 89pp; English.
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric human IL-13 protein containing an N-terminal
CC tetanus p30 peptide (immunogen 3) of the invention.

Seq Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
Best Local Similarity 100.0%; Pred. No. 6.4e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21
Db 1 FNNFTVSFVLRVVKVSASHLE 21

RESULT 112
ADL64006
ID ADL64006 standard; protein; 133 AA.
XX AC ADL64006;
XX DT 03-JUN-2004 (first entry)
XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 18.
XX KW human; immunogenic; IL-13; interleukin-13; vaccine;
KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
KW chimeric; tetanus p30; mutant; mutein.
XX OS Homo sapiens.
OS Clostridium tetani.
OS Chimeric.
OS Synthetic.
XX FH Key Location/Qualifiers
FT Peptide 1..21
FT /note= "Tetanus P30 peptide"
FT Protein 22..133
FT /note= "IL-13 protein"
FT Misc-difference 28
FT /note= "Wild type Thr substituted for Ser"
FT Misc-difference 31
FT /note= "Wild type Arg substituted for Lys"
FT Misc-difference 38
FT /note= "Wild type Val substituted for Ala"
FT Misc-difference 69
FT /note= "Wild type Glu substituted for Asp"
FT Misc-difference 76
FT /note= "Wild type Met substituted for Ile"
FT Misc-difference 79
FT /note= "Wild type Gly substituted for Ala"
FT Misc-difference 82
FT /note= "Wild type Lys substituted for Arg"
FT Misc-difference 104
FT /note= "Wild type His substituted for Arg"
FT Misc-difference 117
FT /note= "Wild type Lys substituted for Thr"
FT Misc-difference 121
FT /note= "Wild type Leu substituted for Val"
FT Misc-difference 125
FT /note= "Wild type Lys substituted for Arg"
FT Misc-difference 129
FT /note= "Wild type Glu substituted for Gln"
FT Misc-difference 131
FT /note= "Wild type Arg substituted for Thr"
XX WO2004019974-A2.
XX 11-MAR-2004.
XX 28-AUG-2003; 2003WO-GB003703.
XX 30-AUG-2002; 2002GB-00020212.
XX 28-FEB-2003; 2003GB-00004672.

XX (GLAX) GLAXO GROUP LTD.
PA (ASHM/) ASHMAN C.
XX
XX Ashman C, Ellis JH;
PI WPI; 2004-239121/22.
DR N-PSDB; ADL63991.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
PT that drives an immune response recognizing human IL-13 and foreign T-cell
PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 18; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC sequence is the chimeric human IL-13 protein containing non-human amino
CC acid substitutions and an N-terminal tetanus p30 peptide (immunogen 9) of
CC the invention.
XX
XX SQ Sequence 133 AA;

XX Query Match 100.0%; Score 112; DB 8; Length 133;
XX Best Local Similarity 100.0%; Pred. No. 6.4e-11;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

XX QY 1 FNNFTVSFWLRVFKVSASHLE 21
XX Db 1 FNNFTVSFWLRVFKVSASHLE 21

XX RESULT 113
XX ADL64007
XX ID ADL64007 standard; protein; 133 AA.
XX AC ADL64007;
XX AC
XX DT 03-JUN-2004 (first entry)
XX
XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 19.
XX
XX human; immunogenic; IL-13; interleukin-13; vaccine;
XX airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX chimeric; tetanus p30; mutant; mutein.
XX
XX Homo sapiens.
XX OS Clostridium tetani.
XX OS Chimeric.
XX OS Synthetic.
XX
XX Key Location/Qualifiers
XX FH Peptide 1..21
XX FT Peptide /note= "Tetanus P30 peptide"
XX FT Protein 22..133
XX FT /note= "IL-13 protein"

FT Misc-difference 28 /note= "Wild type Thr substituted for Ser"
FT Misc-difference 31 /note= "Wild type Arg substituted for Lys"
FT Misc-difference 32 /note= "Wild type Glu substituted for Ile"
FT Misc-difference 38 /note= "Wild type Val substituted for Ala"
FT Misc-difference 69 /note= "Wild type Glu substituted for Asp"
FT Misc-difference 76 /note= "Wild type Met substituted for Ile"
FT Misc-difference 79 /note= "Wild type Gly substituted for Ala"
FT Misc-difference 82 /note= "Wild type lys substituted for Arg"
FT Misc-difference 104 /note= "Wild type His substituted for Arg"
FT Misc-difference 117 /note= "Wild type lys substituted for Thr"
FT Misc-difference 121 /note= "Wild type Leu substituted for Val"
FT Misc-difference 125 /note= "Wild type Lys substituted for Arg"
FT Misc-difference 129 /note= "Wild type Glu substituted for Gln"
FT Misc-difference 131 /note= "Wild type Arg substituted for Thr"
XX
XX WO2004019974-A2.
XX
XX 11-MAR-2004.
XX
XX 28-AUG-2003; 2003WO-GB003703.
XX
XX 30-AUG-2002; 2002GB-00020212.
XX 28-FEB-2003; 2003GB-00004672.
XX
XX (GLAX) GLAXO GROUP LTD.
XX (ASHM/) ASHMAN C.
XX
XX Ashman C, Ellis JH;
XX
XX WPI: 2004-239121/22.
XX N-PSDB; ADL63992.
XX
XX New immunogenic composition comprising an interleukin-13 (IL-13) element
XX that drives an immune response recognizing human IL-13 and foreign T-cell
XX epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; SEQ ID NO 19; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
XX IL-13 (interleukin-13) element that is capable of driving an immune
XX response by recognising human IL-13 and one or more foreign T-cell
XX epitopes. Specifically, it refers to a method for producing a human
XX chimeric IL-13 immunogen formulated in an appropriate manner to generate
XX a human vaccine. The present invention describes human chimeric IL-13
XX sequences as having a similar conformational shape to native human IL-13
XX while having sufficient amino acid sequence diversity, attributable to
XX non-human mammalian species, to enhance its immunogenicity. Accordingly,
XX the method results in a reduction in airway hyper-responsiveness (AHR),
XX mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
XX the airways and skin irritation as well as reducing the requirement for
XX inhaled corticosteroids (ICS). As such, these compositions, which exhibit
XX dermatological and antiasthmatic activities, can be used via gene therapy
XX to treat individuals suffering from or susceptible to chronic obstructive
XX pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
XX sequence is the chimeric human IL-13 protein containing non-human amino
XX acid substitutions and an N-terminal tetanus p30 peptide (immunogen 10)
XX of the invention.
XX
XX SQ Sequence 133 AA;

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Query Match      100.0%; Score 112; DB 8; Length 133;
Best Local Similarity 100.0%; Pred. No. 6.4e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 114
ADL63968
ID ADL63968 standard; protein; 133 AA.
XX AC ADL63968;
XX XX
XX DT 03-JUN-2004 (first entry)
XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 19.
XX KW human; immunogenic; IL-13; interleukin-13; vaccine;
XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX KW chimeric; tetanus p30; mutant; mutein.
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX OS Chimeric.
XX OS Synthetic.
XX XX
XX FH Key Location/Qualifiers
XX FT Peptide 1..21
XX FT Protein 22..133
XX FT Misc-difference 28 /note= "IL-13 protein"
XX FT Misc-difference 31 /note= "Wild type Thr substituted for Ser"
XX FT Misc-difference 32 /note= "Wild type Arg substituted for Lys"
XX FT Misc-difference 38 /note= "Wild type Glu substituted for Ile"
XX FT Misc-difference 69 /note= "Wild type Val substituted for Ala"
XX FT Misc-difference 76 /note= "Wild type Glu substituted for Asp"
XX FT Misc-difference 79 /note= "Wild type Met substituted for Ile"
XX FT Misc-difference 82 /note= "Wild type Gly substituted for Ala"
XX FT Misc-difference 104 /note= "Wild type Lys substituted for Arg"
XX FT Misc-difference 117 /note= "Wild type His substituted for Arg"
XX FT Misc-difference 121 /note= "Wild type Lys substituted for Thr"
XX FT Misc-difference 125 /note= "Wild type Leu substituted for Val"
XX FT Misc-difference 129 /note= "Wild type Lys substituted for Arg"
XX FT Misc-difference 131 /note= "Wild type Glu substituted for Gln"
XX FT Misc-difference 131 /note= "Wild type Arg substituted for Thr"
XX FN WO2004019975-A2.
XX XX
XX PD 11-MAR-2004.
XX XX
XX PF 28-AUG-2003; 2003WO-GB003729.
XX XX
XX PR 30-AUG-2002; 2002GB-00020211.

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PR 28-FEB-2003; 2003GB-00004672.
XX (GLAX) GLAXO GROUP LTD.
XX XX
XX PI Ellis JH, Ashman C;
XX XX WPI; 2004-239122/22.
XX DR N-PSDB; ADL63916.
XX XX
XX PT New vaccine composition useful for treating asthma, Chronic obstructive
XX FT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
XX FT immunogen generating an immune response against interleukin-13.
XX PS Disclosure; SEQ ID NO 19; 89pp; English.
XX XX
XX CC This invention relates to a novel immunogenic composition comprising an
XX CC IL-13 (interleukin-13) element that is capable of driving an immune
XX CC response by recognising human IL-13 and one or more foreign T-cell
XX CC epitopes. Specifically, it refers to a method for producing a human
XX CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
XX CC a human vaccine. The present invention describes human chimeric IL-13
XX CC sequences as having a similar conformational shape to native human IL-13
XX CC while having sufficient amino acid sequence diversity, attributable to
XX CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
XX CC the method results in a reduction in airway hyper-responsiveness (AHR),
XX CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
XX CC the airways and skin irritation, as well as reducing the requirement for
XX CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
XX CC dermatological and antiasthmatic activities, can be used via gene therapy
XX CC to treat individuals suffering from or susceptible to chronic obstructive
XX CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
XX CC sequence is the chimeric human IL-13 protein containing non-human amino
XX CC acid substitutions and an N-terminal tetanus p30 peptide (immunogen 10)
XX CC of the invention.
XX SQ Sequence 133 AA;
Query Match      100.0%; Score 112; DB 8; Length 133;
Best Local Similarity 100.0%; Pred. No. 6.4e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 115
ADL63909
ID ADL63909 standard; protein; 133 AA.
XX AC ADL63909;
XX XX
XX DT 03-JUN-2004 (first entry)
XX DE Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 12.
XX KW human; immunogenic; IL-13; interleukin-13; vaccine;
XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX KW chimeric; tetanus p30.
XX XX
XX OS Homo sapiens.
XX OS Clostridium tetani.
XX OS Chimeric.
XX XX
XX FH Key Location/Qualifiers
XX FT Peptide 1..21
XX FT Protein /note= "Tetanus p30 peptide"
XX XX
XX PN WO2004019975-A2.
XX XX

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PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003729.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 PA Ellis JH, Ashman C;
 XX WPI; 2004-239122/22.
 DR New vaccine composition useful for treating asthma, Chronic obstructive
 XX pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX Disclosure; SEQ ID NO 12; 89pp; English.
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric human IL-13 protein containing an N-terminal
 CC tetanus p30 peptide (immunogen 3) of the invention.
 XX Sequence 133 AA;
 SQ

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRPKVSASHLE 21

RESULT 116
 ADL63967
 ID ADL63967 standard; protein; 133 AA.
 AC ADL63967;
 XX
 DT 03-JUN-2004 (first entry)
 XX Chimeric human IL-13 protein with tetanus toxin p30 peptide SeqID 18.
 DE human; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW chimeric; tetanus p30; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..21

FT Protein /note= "Tetanus P30 peptide"
 FT 22..133
 FT /note= "IL-13 protein"
 FT Misc-difference 28 /note= "Wild type Thr substituted for Ser"
 FT Misc-difference 31 /note= "Wild type Arg substituted for Lys"
 FT Misc-difference 38 /note= "Wild type Val substituted for Ala"
 FT Misc-difference 69 /note= "Wild type Glu substituted for Asp"
 FT Misc-difference 76 /note= "Wild type Met substituted for Ile"
 FT Misc-difference 79 /note= "Wild type Gly substituted for Ala"
 FT Misc-difference 82 /note= "Wild type Lys substituted for Arg"
 FT Misc-difference 104 /note= "Wild type His substituted for Arg"
 FT Misc-difference 117 /note= "Wild type Lys substituted for Thr"
 FT Misc-difference 121 /note= "Wild type Leu substituted for Val"
 FT Misc-difference 125 /note= "Wild type Lys substituted for Arg"
 FT Misc-difference 129 /note= "Wild type Glu substituted for Gln"
 FT Misc-difference 131 /note= "Wild type Arg substituted for Thr"
 XX
 XX WO2004019975-A2.
 PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003729.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 DR WPI; 2004-239122/22.
 DR N-PSDB; ADL63915.
 XX New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX Disclosure; SEQ ID NO 18; 89pp; English.
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC sequence is the chimeric human IL-13 protein containing non-human amino
 CC acid substitutions and an N-terminal tetanus p30 peptide (immunogen 9) of
 CC the invention.
 XX Sequence 133 AA;
 SQ

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 117
 ADL97937
 ID ADL97937 standard; protein; 133 AA.
 AC ADL97937;
 XX
 XX 03-JUN-2004 (first entry)
 DT
 DE Human IL-13 mutant/tetanus toxin P30 epitope immunogen 10, SEQ ID NO:19.
 XX
 KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
 KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; antiallergic; dermatological; human; T-helper epitope;
 KW tetanus toxin; P30; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS Synthetic.
 XX
 XX WO2004019979-A2.
 XX
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003721.
 XX
 XX 30-AUG-2002; 2002GB-00020211.
 XX
 XX 28-FEB-2003; 2003GB-00004672.
 XX
 XX (GLAX) GLAXO GROUP LTD.
 XX
 XX Ellis JH, Ashman C;
 XX
 XX WPI: 2004-239126/22.
 XX
 XX N-PSDB; ADL97899.
 XX
 XX Vaccine composition useful for treating asthma, Chronic Obstructive
 PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; SEQ ID NO 19; 45pp; English.

The invention relates to a vaccine composition for treating asthma or
 COPD (chronic obstructive pulmonary disease). The vaccine composition
 comprises an immunogen that is capable of generating an immune response
 against self interleukin-13 (IL-13) and an adjuvant composition
 comprising a combination of an immunostimulatory oligonucleotide
 containing at least one unmethylated CG motif and a saponin. The IL-13
 immunogen is preferably a human IL-13 supplemented with foreign T-helper
 epitopes, or is a non-human IL-13 backbone substituted with human IL-13
 epitopes. The vaccine composition is useful for treating asthma or COPD,
 or atopic disorders such as hayfever, contact allergies or dermatitis.
 The present sequence represents a human IL-13-derived immunogen of the
 invention which comprises a further mutated version of human IL-13
 immunogen 1 and the tetanus toxin P30 epitope.

Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 118
 ADL97936
 ID ADL97936 standard; protein; 133 AA.
 AC ADL97936;
 XX
 XX 03-JUN-2004 (first entry)
 DT
 DE Human IL-13 mutant/tetanus toxin P30 epitope immunogen 9, SEQ ID NO:18.
 XX
 KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
 KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; antiallergic; dermatological; human; T-helper epitope;
 KW tetanus toxin; P30; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 OS Synthetic.
 XX
 XX WO2004019979-A2.
 XX
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003721.
 XX
 XX 30-AUG-2002; 2002GB-00020211.
 XX
 XX 28-FEB-2003; 2003GB-00004672.
 XX
 XX (GLAX) GLAXO GROUP LTD.
 XX
 XX Ellis JH, Ashman C;
 XX
 XX WPI: 2004-239126/22.
 XX
 XX N-PSDB; ADL97898.
 XX
 XX Vaccine composition useful for treating asthma, Chronic Obstructive
 PT Pulmonary Disease or atopic disorders, e.g. dermatitis, comprises
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; SEQ ID NO 18; 45pp; English.

The invention relates to a vaccine composition for treating asthma or
 COPD (chronic obstructive pulmonary disease). The vaccine composition
 comprises an immunogen that is capable of generating an immune response
 against self interleukin-13 (IL-13) and an adjuvant composition
 comprising a combination of an immunostimulatory oligonucleotide
 containing at least one unmethylated CG motif and a saponin. The IL-13
 immunogen is preferably a human IL-13 supplemented with foreign T-helper
 epitopes, or is a non-human IL-13 backbone substituted with human IL-13
 epitopes. The vaccine composition is useful for treating asthma or COPD,
 or atopic disorders such as hayfever, contact allergies or dermatitis.
 The present sequence represents a human IL-13-derived immunogen of the
 invention which comprises human IL-13 immunogen 1 (ADL97933 and the
 tetanus toxin P30 epitope.

Sequence 133 AA;

Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 1 FNNFTVSFWLRVPKVSASHLE 21

RESULT 119
 ADL97892
 ID ADL97892 standard; protein; 133 AA.
 XX AC ADL97892;
 XX DT 03-JUN-2004 (first entry)
 XX DE Human IL-13/tetanus toxin P30 epitope immunogen 3, SEQ ID NO:12.
 XX KW Interleukin-13; IL-13; self immunogen; CpG oligonucleotide; saponin;
 KW asthma; chronic obstructive pulmonary disease; COPD; atopic disorder;
 KW hayfever; contact allergy; dermatitis; vaccine; antiasthmatic;
 KW respiratory; anti-allergic; dermatological; human; T-helper epitope;
 KW tetanus toxin; P30; mutant; mutein.
 XX OS Homo sapiens.
 OS Clostridium tetani.
 OS Chimeric.
 FT Key Location/Qualifiers
 FT Region 1..21
 FT /note= "Tetanus toxin P30 epitope"
 XX WO2004019979-A2.
 XX 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003721.
 XX 30-AUG-2002; 2002GB-00020211.
 XX 28-FEB-2003; 2003GB-00004672.
 XX (GLAXO) GLAXO GROUP LTD.
 XX Ellis JH, Ashman C;
 WPI; 2004-239126/22.
 XX Vaccine composition useful for treating asthma, Chronic Obstructive
 PT Pulmonary Disease or atopic disorders, e.g. Dermatitis, comprises
 PT immunogen generating an immune response against interleukin-13.
 XX Disclosure; SEQ ID NO 12; 45pp; English.
 XX The invention relates to a vaccine composition for treating asthma or
 CC COPD (chronic obstructive pulmonary disease). The vaccine composition
 CC comprises an immunogen that is capable of generating an immune response
 CC against self interleukin-13 (IL-13) and an adjuvant composition
 CC comprising a combination of an immunostimulatory oligonucleotide
 CC containing at least one unmethylated CG motif and a saponin. The IL-13
 CC immunogen is preferably a human IL-13 supplemented with foreign T-helper
 CC epitopes, or is a non-human IL-13 backbone substituted with foreign T-helper
 CC epitopes. The vaccine composition is useful for treating asthma or COPD,
 CC or atopic disorders such as hayfever, contact allergies or dermatitis.
 CC The present sequence represents a human IL-13/tetanus toxin P30 epitope
 XX immunogen of the invention.
 XX SQ Sequence 133 AA;
 Query Match 100.0%; Score 112; DB 8; Length 133;
 Best Local Similarity 100.0%; Pred. No. 6.4e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 RESULT 120
 AAB49089
 ID AAB49089 standard; protein; 136 AA.
 XX

AC AAB49089;
 XX 11-SEP-2003 (revised)
 DT 27-MAR-2001 (first entry)
 XX XX
 DE Amyloid beta tetanus toxoid/HA/CS fusion protein, SEQ ID NO:25.
 XX KW Amyloid disease; amyloid fibril deposition; amyloid plaque; immunogenic;
 KW antibody; vaccine; Alzheimer's disease; type 2 diabetes;
 KW reactive system amyloidosis; systemic senile amyloidosis;
 KW familial amyloid cardiomyopathy; transmissible spongiform encephalopathy;
 KW Creutzfeld-Jakob disease; Kuru;
 KW haemodialysis-associated beta-2-microglobulin deposition;
 KW amyloid beta peptide; universal T-cell epitope; neuroprotective.
 XX OS Homo sapiens.
 OS Clostridium tetani.
 OS Influenza virus.
 OS Plasmodium falciparum.
 OS Chimeric.
 XX WO200072876-A2.
 XX 07-DEC-2000.
 XX 01-JUN-2000; 2000WO-US015239.
 XX 01-JUN-1999; 99US-0137010P.
 XX (NEUR-) NEURALAB LTD.
 XX Schenk DB;
 XX WPI; 2001-070921/08.
 XX Pharmaceutical composition comprising immunogen against amyloid component
 PT such as fibril peptide or protein, or antibody against amyloid component
 PT useful for treating amyloid diseases or amyloidoses.
 XX Disclosure; Page 46; 140pp; English.
 XX The invention relates to a novel pharmaceutical composition for
 CC preventing or treating a disease characterised by amyloid fibril deposits
 CC (amyloid plaques) in a patient. The pharmaceutical composition comprises
 CC an agent that will induce an immune response against an amyloid
 CC component, or an antibody or antibody fragment that binds to an amyloid
 CC component. The invention also relates to a method for determining the
 CC prognosis of a patient undergoing treatment for an amyloid disorder which
 CC involves measuring a patient serum amount of immunoreactivity against a
 CC selected amyloid component. A patient serum immunoreactivity of at least
 CC four times a base line serum immunoreactivity control level indicates a
 CC prognosis of improved status with respect to the disorder. The
 CC pharmaceutical compositions of the invention are useful for treating a
 CC wide variety of disorders characterised by amyloid fibril deposition in a
 CC patient. Such disorders include Alzheimer's disease characterised by
 CC amyloid beta peptide fibril deposits; type 2 diabetes characterised by
 CC islet amyloid protein peptide (IAPP, amylin) fibrils; reactive systemic
 CC amyloidosis associated with systemic inflammatory diseases (e.g.,
 CC rheumatoid arthritis, osteomyelitis, tuberculosis) characterised by AA
 CC fibrils derived from serum amyloid A protein (ApoSAA); systemic senile
 CC amyloidosis and familial amyloid cardiomyopathy characterised by ATTR
 CC fibrils derived from transthyretin (TTR); transmissible spongiform
 CC encephalopathies (e.g. Creutzfeld-Jakob disease, Kuru) characterised by
 CC prion protein deposits; and beta-2-microglobulin deposits which form as a
 CC result of long term haemodialysis treatment. The present sequence
 CC represents an immunogenic fusion protein comprising an amyloid beta
 CC peptide fused to a universal T-cell epitope which may be used in a
 CC composition to treat or prevent Alzheimer's disease. (Updated on 11-SEP-
 CC 2003 to standardise OS field)
 XX SQ Sequence 136 AA;
 Query Match 100.0%; Score 112; DB 4; Length 136;

Best Local Similarity 100.0%; Pred. No. 6.5e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
Db 52 FNNFTVSFWLRVVKVSASHLE 72

RESULT 121
AAB45510
ID AAB45510 standard; protein; 139 AA.
XX
AC AAB45510;
XX
DT 26-FEB-2001 (first entry)
XX
DE Modified murine interleukin-5 SEQ ID NO: 22.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
XX cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Mus musculus.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
PS Example 10; Page 137; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
SQ Sequence 139 AA;
XX
Query Match 100.0%; Score 112; DB 3; Length 139;
Best Local Similarity 100.0%; Pred. No. 6.7e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
Db 117 FNNFTVSFWLRVVKVSASHLE 137

RESULT 122
AAB45499
ID AAB45499 standard; protein; 141 AA.
XX
AC AAB45499;
XX
DT 26-FEB-2001 (first entry)
XX

DE Modified human interleukin-5 SEQ ID NO: 11.
XX
KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
KW cancer; eosinophilia; vaccine; allergic rhinitis.
XX
OS Homo sapiens.
OS Clostridium tetani.
XX
PN WO200065058-A1.
XX
PD 02-NOV-2000.
XX
PF 19-APR-2000; 2000WO-DK000205.
XX
PR 23-APR-1999; 99DK-00000552.
XX
PR 06-MAY-1999; 99US-0132811P.
XX
PA (MEBI-) M & E BIOTECH AS.
XX
PI Klysner S;
XX
DR WPI; 2000-672791/65.
XX
XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
PT IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
PT amelioration of asthma or other chronic allergic conditions.
XX
PS Example 10; Page 127; 172pp; English.
XX
CC The present invention is concerned with methods of treating asthma,
CC eosinophilia, allergic rhinitis and other allergic diseases. These
CC involve the use of interleukin-5 (IL-5) analogues and modified IL-5
CC proteins and their coding sequences to down-regulate IL-5 activity and
CC thus reduce eosinophil numbers. The allergic diseases may be treated
CC using autovaccines, nucleic acid vaccines or live vaccines. In addition,
CC it is possible that they may be used in the treatment of cancer and
CC helminthic infections
XX
SQ Sequence 141 AA;
XX
Query Match 100.0%; Score 112; DB 3; Length 141;
Best Local Similarity 100.0%; Pred. No. 6.8e-11;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
Db 119 FNNFTVSFWLRVVKVSASHLE 139

RESULT 123
AAY49252
ID AAY49252 standard; protein; 143 AA.
XX
AC AAY49252;
XX
DT 07-FEB-2000 (first entry)
XX
DE N6 polypeptide carrier protein construct amino acid sequence.
XX
KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
KW encapsulated bacteria.
XX
OS Synthetic.
XX
PN WO9955730-A2.
XX
PD 04-NOV-1999.
XX
PF 27-APR-1999; 99WO-IB000844.
XX
PR 27-APR-1998; 98GB-00008932.
XX
PA (CHIR-) CHIRON SPA.

XX PI Rappuoli R, Grandi G;
 XX WPI; 2000-023325/02.
 XX N-PSDB; AAZ31414.
 XX
 XX Carrier proteins containing CD4+ epitopes useful for protecting against
 XX diseases caused by encapsulated bacteria.
 XX
 XX Disclosure; Fig 2; 76pp; English.
 XX
 XX The invention provides carrier proteins comprising at least 5 CD4+ T cell
 XX epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 XX carrier protein can be prepared by expressing a vector comprising a
 XX nucleic acid molecule encoding the protein, in a host cell and recovering
 XX the expressed protein. The carrier protein can also be produced by (a)
 XX constructing oligonucleotide molecules that encode peptide epitopes; (b)
 XX annealing the oligonucleotides to form duplexes; (c) introducing the
 XX duplexes into an expression vector; (d) introducing the expression vector
 XX into a host cell; and (e) isolating the fusion protein produced from a
 XX culture of the host cells. The carrier protein can be used as a
 XX protective immunogen in the control of diseases caused by encapsulated
 XX bacteria. The present sequence represents the amino acid sequence of N6
 XX polypeptide carrier protein construct
 XX
 XX Sequence 143 AA;
 XX
 XX Query Match 100.0%; Score 112; DB 3; Length 143;
 XX Best Local Similarity 100.0%; Pred. No. 6.9e-11;
 XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
 XX |||||
 XX Db 103 FNNFTVSFWLRVPKVSASHLE 123
 XX
 XX RESULT 124
 XX AAB45530
 XX ID AAB45530 standard; protein; 145 AA.
 XX AC AAB45530;
 XX XX 26-FEB-2001 (first entry)
 XX DE Modified murine interleukin-5 SEQ ID NO: 60.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Mus musculus.
 XX OS Clostridium tetani.
 XX XX WO2000065058-A1.
 XX XX 02-NOV-2000.
 XX XX 19-APR-2000; 2000WO-DK000205.
 XX XX 23-APR-1999; 99DK-00000552.
 XX XX 06-MAY-1999; 99US-0132811P.
 XX XX (MEBI-) M & E BIOTECH AS.
 XX XX Klysner S;
 XX XX WPI; 2000-672791/65.
 XX XX N-PSDB; AAC68883.
 XX XX
 XX XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 XX amelioration of asthma or other chronic allergic conditions.
 XX Example 12; Page 166-167; 172pp; English.

XX XX The present invention is concerned with methods of treating asthma,
 XX eosinophilia, allergic rhinitis and other allergic diseases. These
 XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 XX proteins and their coding sequences to down-regulate IL-5 activity and
 XX thus reduce eosinophil numbers. The allergic diseases may be treated
 XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 XX it is possible that they may be used in the treatment of cancer and
 XX helminthic infections
 XX
 XX Sequence 145 AA;
 XX
 XX Query Match 100.0%; Score 112; DB 3; Length 145;
 XX Best Local Similarity 100.0%; Pred. No. 7e-11;
 XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 XX
 XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
 XX |||||
 XX Db 101 FNNFTVSFWLRVPKVSASHLE 121
 XX
 XX RESULT 125
 XX AAB45522
 XX ID AAB45522 standard; protein; 147 AA.
 XX AC AAB45522;
 XX XX 26-FEB-2001 (first entry)
 XX DE Modified human interleukin-5 SEQ ID NO: 44.
 XX KW Asthma; IL-5; interleukin-5; allergy; cytokine; helminthic infection;
 XX KW cancer; eosinophilia; vaccine; allergic rhinitis.
 XX OS Homo sapiens.
 XX OS Clostridium tetani.
 XX XX WO2000065058-A1.
 XX XX 02-NOV-2000.
 XX XX 19-APR-2000; 2000WO-DK000205.
 XX XX 23-APR-1999; 99DK-00000552.
 XX XX 06-MAY-1999; 99US-0132811P.
 XX XX (MEBI-) M & E BIOTECH AS.
 XX XX Klysner S;
 XX XX WPI; 2000-672791/65.
 XX XX N-PSDB; AAC68875.
 XX XX
 XX XX Down-regulating interleukin 5 (IL-5) activity in humans by administering
 XX IL-5 and/or an IL-5 analogue, useful in the treatment, prophylaxis or
 XX amelioration of asthma or other chronic allergic conditions.
 XX Example 12; Page 153; 172pp; English.
 XX
 XX The present invention is concerned with methods of treating asthma,
 XX eosinophilia, allergic rhinitis and other allergic diseases. These
 XX involve the use of interleukin-5 (IL-5) analogues and modified IL-5
 XX proteins and their coding sequences to down-regulate IL-5 activity and
 XX thus reduce eosinophil numbers. The allergic diseases may be treated
 XX using autovaccines, nucleic acid vaccines or live vaccines. In addition,
 XX it is possible that they may be used in the treatment of cancer and
 XX helminthic infections
 XX
 XX Sequence 147 AA;
 XX
 XX Query Match 100.0%; Score 112; DB 3; Length 147;
 XX Best Local Similarity 100.0%; Pred. No. 7.2e-11;
 XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRLVPKVSASHLE 21
 ID AAW81333 standard; protein; 158 AA.
 Db 103 FNNFTVSFVLRLVPKVSASHLE 123

RESULT 126
 AAW81333
 ID AAW81333 standard; protein; 158 AA.

XX AC AAW81333;
 XX DT 21-APR-1999 (first entry)
 XX DE TNF30-2, a TNF-alpha analogue.
 XX KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 XX KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 XX KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 XX KW asthma.

XX OS Synthetic.
 XX OS Homo sapiens.
 XX FN WO9846642-A1.
 XX XX 22-OCT-1998.
 XX XX 15-APR-1998; 98WO-DK000157.
 XX XX 15-APR-1997; 97DK-00000418.
 XX XX 24-APR-1997; 97US-0044187P.
 XX PA (PERR) FARM LAB FERRING AS.

XX FI Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX DR WPI; 1998-594561/50.
 XX DR N-PSDB; AAV68422.

XX PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

XX PS Claim 16; Page 76-77; 134pp; English.

XX CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 XX asthma

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRLVPKVSASHLE 21
 Db 41 FNNFTVSFVLRLVPKVSASHLE 61

RESULT 127

AAW81335
 ID AAW81335 standard; protein; 158 AA.

XX AC AAW81335;

XX DT 21-APR-1999 (first entry)

XX DE TNF30-4, a TNF-alpha analogue.

XX KW Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue;
 XX KW vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;
 XX KW cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis;
 XX KW asthma.

XX OS Synthetic.
 XX OS Homo sapiens.
 XX FN WO9846642-A1.

XX XX 22-OCT-1998.

XX XX 15-APR-1998; 98WO-DK000157.

XX XX 15-APR-1997; 97DK-00000418.

XX XX 24-APR-1997; 97US-0044187P.

XX PA (PERR) FARM LAB FERRING AS.

XX FI Jensen MR, Mouritsen S, Elsner H, Dalum I;

XX DR WPI; 1998-594561/50.

XX DR N-PSDB; AAV68424.

XX PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.

XX PS Example 1; Page 80; 134pp; English.

XX CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 XX asthma

XX SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRLVPKVSASHLE 21

Db 108 FNNFTVSFVLRLVPKVSASHLE 128

RESULT 128

AAW81336

ID AAW81336 standard; protein; 158 AA.

XX AC AAW81336;

XX XX

21-APR-1999 (first entry)

TNF30-5, a TNF-alpha analogue.

Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue; vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis; cancer; disseminated sclerosis; diabetes; psoriasis; osteoporosis; asthma.

Synthetic.

Homo sapiens.

W09846642-A1.

22-OCT-1998.

15-APR-1998; 98NO-DK000157.

15-APR-1997; 97DK-00000418.

24-APR-1997; 97US-0044187P.

(FERR) FARM LAB FERRING AS.

Jensen MR, Mouritsen S, Elsner H, Dalum I;

WFI; 1998-594561/50.

N-PSDB; AAV68425.

Modified human tumour necrosis factor-alpha - comprises immunodominant T cell epitope, useful in vaccines to treat or prevent TNF-associated diseases, e.g. cancer.

Claim 15; Page 81-82; 134pp; English.

The present sequence represents a modified human tumour necrosis factor-alpha (TNF-alpha) analogue. The analogues have no residual TNF activity and are immunogenic in a large proportion of the human population (by using promiscuous epitopes). The TNF-alpha analogue is able to generate, in humans, neutralizing antibodies to wild-type human TNF alpha, has at least one fragment of TNF substituted by a peptide containing an immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope. The substitution causes a significant change in the amino acid sequence of any one of the strands in the front beta-sheet, any of the connecting loops or any of the B', I or D strands in the back beta-sheet. The TNF-alpha analogues are used as vaccines for treatment or prevention of diseases associated with excessive release or activity of TNF-alpha, e.g. rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and asthma

Sequence 158 AA;

Query Match 100.0%; Score 112; DB 2; Length 158;

Best Local Similarity 100.0%; Pred. No. 7.8e-11;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY. 1 FNNFTVSFWLRVPKVSASHLE 21
|||||

Db 133 FNNFTVSFWLRVPKVSASHLE 153
|||||

RESULT 129

AAW81332

ID AAW81332 standard; protein, 158 AA.

AC AAW81332;

XX

DT 21-APR-1999 (first entry)

XX

DE TNF30-1, a TNF-alpha analogue.

XX

Human tumour necrosis factor-alpha; TNF-alpha; TNF-alpha analogue; vaccine; rheumatoid arthritis; Crohn's disease; ulcerative colitis;

KW

PN WO9846642-A1.
 XX
 PD 22-OCT-1998.
 XX
 PP 15-APR-1998; 98WO-DK000157.
 XX
 PR 15-APR-1997; 97DK-00000418.
 PR 24-APR-1997; 97US-0044187P.
 XX
 PA (PERR) FARM LAB FERRING AS.
 XX
 PI Jensen MR, Mouritsen S, Elsner H, Dalum I;
 XX
 DR WPI; 1998-594561/50.
 DR N-PSDB; AAV68423.
 XX
 PT Modified human tumour necrosis factor-alpha - comprises immunodominant T
 PT cell epitope, useful in vaccines to treat or prevent TNF-associated
 PT diseases, e.g. cancer.
 XX
 PS Claim 14; Page 78; 134pp; English.
 XX
 CC The present sequence represents a modified human tumour necrosis factor-
 CC alpha (TNF-alpha) analogue. The analogues have no residual TNF activity
 CC and are immunogenic in a large proportion of the human population (by
 CC using promiscuous epitopes). The TNF-alpha analogue is able to generate,
 CC in humans, neutralizing antibodies to wild-type human TNF alpha, has at
 CC least one fragment of TNF substituted by a peptide containing an
 CC immunodominant T-cell epitope, and at least one TNF-alpha B-cell epitope.
 CC The substitution causes a significant change in the amino acid sequence
 CC of any one of the strands in the front beta-sheet, any of the connecting
 CC loops or any of the B', I or D strands in the back beta-sheet. The TNF-
 CC alpha analogues are used as vaccines for treatment or prevention of
 CC diseases associated with excessive release or activity of TNF-alpha, e.g.
 CC rheumatoid arthritis, Crohn's disease, ulcerative colitis, cancer of any
 CC sort, disseminated sclerosis, diabetes, psoriasis, osteoporosis and
 CC asthma
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 112; DB 2; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 65 FNNFTVSFWLRVPKVSASHLE 85
 RESULT 131
 ABB07282
 ID ABB07282 standard; protein; 158 AA.
 AC ABB07282;
 XX
 XX 26-MAR-2002 (first entry)
 DT Human TNF-alpha analogue TNF30-1.
 DE
 XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF30-1.
 XX
 OS Homo sapiens.
 XX
 XX WO200197837-A1.
 PN
 XX 27-DEC-2001.
 PD
 XX 20-JUN-2001; 2001WO-DK000431.
 PF
 XX

PR 21-JUN-2000; 2000DK-00000966.
 XX (PERR) FERRING BV.
 PA
 XX Olesen OF, Balchen T, Bouman MHEM;
 PI
 XX WPI; 2002-114542/15.
 DR N-PSDB; ABA94392.
 DR
 XX Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.
 XX
 PS Claim 21; Page 48-49; 55pp; English.
 XX
 CC The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self-
 CC protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (I) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF30-1
 XX
 SQ Sequence 158 AA;
 Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 11 FNNFTVSFWLRVPKVSASHLE 31
 RESULT 132
 ABB07279
 ID ABB07279 standard; protein; 158 AA.
 XX
 XX ABB07279;
 AC
 XX
 XX 26-MAR-2002 (first entry)
 DT Human TNF-alpha analogue TNF30-5.
 DE
 XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 KW TNF30-5.
 XX
 OS Homo sapiens.
 XX
 XX WO200197837-A1.
 PN
 XX 27-DEC-2001.
 PD
 XX 20-JUN-2001; 2001WO-DK000431.
 PF
 XX 21-JUN-2000; 2000DK-00000966.
 XX (PERR) FERRING BV.
 PA
 XX Olesen OF, Balchen T, Bouman MHEM;
 PI
 XX WPI; 2002-114542/15.
 DR

DR N-PSDB; ABA94389.

XX Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises PT modified immunogenic self-protein and surfactant capable of acting as PT solubilizer.

XX

PS Claim 21; Page 42-43; 55pp; English.

XX

CC The invention provides a pharmaceutical vaccine composition (I) for the CC prevention or treatment of a self-protein-mediated pathology. The CC composition comprises at least one modified immunogenic self-protein CC (selected from modified TNF-alpha proteins) and a surfactant capable of CC acting as a solubilizer. (I) is useful for preventing or treating a self CC -protein-mediated pathology such as an inflammatory disease, rheumatoid CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis, CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a CC self-protein such as TNF (tumour necrosis factor)-alpha in a human CC subject. (I) comprising cetylpyridinium chloride as a component is useful CC for immunisation of a human subject or for treatment of a human CC inflammatory disease. The present sequence represents a human TNF-alpha CC analogue TNF30-5

XX

SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 133 FNNFTVSFWLRVPKVSASHLE 153

RESULT 133
 ABB07278
 ID ABB07278 standard; protein; 158 AA.

XX AC ABB07278;
 XX DT 26-MAR-2002 (first entry)
 XX DE Human TNF-alpha analogue TNF30-2.
 XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cyostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 TNF30-2.

XX OS Homo sapiens.
 XX PN WO200197837-A1.
 XX PD 27-DEC-2001.
 XX PF 20-JUN-2001; 2001WO-DK000431.
 XX PR 21-JUN-2000; 2000DK-00000966.
 XX PA (FERR) FERRING BV.
 XX PI Olesen OF, Balchen T, Bouman MHEM;
 XX WPI; 2002-114542/15.
 XX DR N-PSDB; ABA94388.

XX Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises PT modified immunogenic self-protein and surfactant capable of acting as PT solubilizer.

PS Claim 21; Page 41; 55pp; English.

XX

CC The invention provides a pharmaceutical vaccine composition (I) for the CC prevention or treatment of a self-protein-mediated pathology. The CC composition comprises at least one modified immunogenic self-protein CC (selected from modified TNF-alpha proteins) and a surfactant capable of CC acting as a solubilizer. (I) is useful for preventing or treating a self CC -protein-mediated pathology such as an inflammatory disease, rheumatoid CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis, CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a CC self-protein such as TNF (tumour necrosis factor)-alpha in a human CC subject. (I) comprising cetylpyridinium chloride as a component is useful CC for immunisation of a human subject or for treatment of a human CC inflammatory disease. The present sequence represents a human TNF-alpha CC analogue TNF30-2

XX

SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 41 FNNFTVSFWLRVPKVSASHLE 61

RESULT 134
 ABB07274
 ID ABB07274 standard; protein; 158 AA.

XX AC ABB07274;
 XX DT 26-MAR-2002 (first entry)
 XX DE Human TNF-alpha analogue TNF30-3.
 XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antiulcer; cyostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteopathic; human;
 TNF30-3.

XX OS Homo sapiens.

XX PN WO200197837-A1.

XX PD 27-DEC-2001.

XX PF 20-JUN-2001; 2001WO-DK000431.

XX PR 21-JUN-2000; 2000DK-00000966.

XX PA (FERR) FERRING BV.

XX PI Olesen OF, Balchen T, Bouman MHEM;

XX WPI; 2002-114542/15.

XX DR N-PSDB; ABA94384.

XX Novel vaccine composition for prevention/treatment of self-protein-mediated pathology such as cancer, diabetes and asthma, comprises PT modified immunogenic self-protein and surfactant capable of acting as PT solubilizer.

XX Claim 21; Page 33-34; 55pp; English.

XX The invention provides a pharmaceutical vaccine composition (I) for the CC prevention or treatment of a self-protein-mediated pathology. The CC composition comprises at least one modified immunogenic self-protein CC (selected from modified TNF-alpha proteins) and a surfactant capable of CC acting as a solubilizer. (I) is useful for preventing or treating a self

CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (II) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human
 CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF30-3

XX Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 65 FNNFTVSFWLRVPKVSASHLE 85

RESULT 135

ABB07283
 ID ABB07283 standard; protein; 158 AA.

AC ABB07283;

DT 26-MAR-2002 (first entry)

DE Human TNF-alpha analogue TNF30-4.

XX TNF-alpha; pharmaceutical; vaccine; self-protein; tumour necrosis factor;
 KW cetylpyridinium chloride; immunisation; antiinflammatory; antirheumatic;
 KW antiarthritic; antitumor; cytostatic; antidiabetic; antipsoriatic;
 KW antiasthmatic; immunomodulator; neuroprotective; osteoprotective; human;
 KW TNF30-4.

OS Homo sapiens.

PN WO200197837-A1.

XX 27-DEC-2001.

XX 20-JUN-2001; 2001WO-DK000431.

XX 21-JUN-2000; 2000DK-00000966.

XX (FERR) FERRING BV.

XX Olesen OF, Balchen T, Bouman MHEM;

XX WPI; 2002-114542/15.

DR N-PSDB; ABA94393.

XX Novel vaccine composition for prevention/treatment of self-protein-
 PT mediated pathology such as cancer, diabetes and asthma, comprises
 PT modified immunogenic self-protein and surfactant capable of acting as
 PT solubilizer.

XX Claim 21; Page 50-51; 55pp; English.

XX The invention provides a pharmaceutical vaccine composition (I) for the
 CC prevention or treatment of a self-protein-mediated pathology. The
 CC composition comprises at least one modified immunogenic self-protein
 CC (selected from modified TNF-alpha proteins) and a surfactant capable of
 CC acting as a solubilizer. (I) is useful for preventing or treating a self
 CC -protein-mediated pathology such as an inflammatory disease, rheumatoid
 CC arthritis, an inflammatory bowel disease (ulcerative colitis or Crohn's
 CC disease), cancer, cachexia, multiple sclerosis, diabetes, psoriasis,
 CC osteoporosis or asthma. (I) is useful for inducing autoantibodies to a
 CC self-protein such as TNF (tumour necrosis factor)-alpha in a human
 CC subject. (II) comprising cetylpyridinium chloride as a component is useful
 CC for immunisation of a human subject or for treatment of a human

CC inflammatory disease. The present sequence represents a human TNF-alpha
 CC analogue TNF30-4

SQ Sequence 158 AA;

Query Match 100.0%; Score 112; DB 5; Length 158;
 Best Local Similarity 100.0%; Pred. No. 7.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 108 FNNFTVSFWLRVPKVSASHLE 128

RESULT 136

AAB20153
 ID AAB20153 standard; protein; 160 AA.

XX AAB20153;

XX 30-APR-2001 (first entry)

DE Growth differentiation factor 8 AutoVac construct GDF-8 ext.

XX Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

OS Homo sapiens.

OS Clostridium tetani.

OS Synthetic.

OS Chimeric.

PH Key Location/Qualifiers

FT Region 1..15 /note= "identical to residues 215-230 of human GDF-8"

FT Region 16..36 /note= "tetanus toxoid P30 epitope"

FT Region 37..51 /note= "tetanus toxoid P2 epitope"

FT Region 52..160 /note= "identical to residues 267-375 of human GDF-8"

FT Misc-difference 124 /note= "Cys-124 may be substituted by Ser to avoid

FT Misc-difference 141..142 /note= "Optionally replaced by Glu-Gly"

FT WO200105820-A2.

XX 25-JAN-2001.

XX 20-JUL-2000; 2000WO-DK000413.

XX 20-JUL-1999; 99DK-00001014.

XX 26-JUL-1999; 99US-0145275P.

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

XX WPI; 2001-112680/12.

XX Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.

XX Example 1; Page 107-108; 110pp; English.

XX The present sequence is that of AutoVac construct GDF-8 ext, which
 CC consists of the C-terminal 160 amino acids of human growth
 CC differentiation factor 8 (GDF-8, see AAF20131) with residues 16-36
 CC substituted by the promiscuous tetanus toxin T-cell epitope p30 (see

CC AAB20144) and residues 37-51 substituted by tetanus toxin T-cell epitope
 CC P2 (see AAB20143). It is an object of the invention to produce a
 CC recombinant therapeutic vaccine that is capable of effecting down-
 CC regulation of GDF-8 in order to increase the muscle growth rate of farm
 CC animals. The vaccines (see AAB20145-53) are capable of breaking
 CC autotolerance against autologous GDF-8. They comprise the C-terminal
 CC portion of human GDF-8 in which a portion of the native sequence is
 CC replaced by a T-cell epitope such as P30, with minimal disturbance of the
 CC authentic 3-dimensional structure of the protein. Nucleic acids encoding
 CC the GDF-8 variant can be used for genetic immunisation of the animals.
 CC Down-regulation of GDF-8 activity can increase muscle mass by up to at
 CC least 45% in cattle, pigs and poultry used for meat production, reducing
 CC the need for antibiotic feed-additives. Anti-GDF8 vaccines can be used to
 CC treat human diseases such as cancer cachexia where muscle atrophy is
 CC pronounced and for patients suffering from acute and chronic heart
 CC failure

XX SQ Sequence 160 AA;

Query Match 100.0%; Score 112; DB 4; Length 160;
 Best Local Similarity 100.0%; Pred. No. 7.9e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 16 FNNFTVSFWLRVPKVSASHLE 36

RESULT 137

RAY84426
 ID AAY84426 standard; protein; 173 AA.

XX AC AAY84426;

XX DT 25-JUL-2000 (first entry)

XX DE An osteoprotegerin ligand/tetanus toxoid P30 epitope fusion protein.

XX KW Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 XX KW tumour necrosis factor receptor; type II transmembrane protein;
 XX KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 XX KW osteoporosis; bone resorption.

XX OS Synthetic.
 XX OS Clostridium tetani.
 XX OS Mus musculus.

XX FH Key Location/Qualifiers
 XX FT Peptide 1..14
 XX FT Protein /note= "His tag"
 XX FT Protein /note= "residues 158-220 of murine OPGL"
 XX FT Peptide 78..98
 XX FT Protein /note= "tetanus toxoid P30 epitope"
 XX FT Protein 99..173
 XX FT Protein /note= "residues 242-316 of murine OPGL"

XX PN W0200015807-A1.

XX XX 23-MAR-2000.

XX XX 13-SEP-1999; 99WO-DK000481.

XX XX 15-SEP-1998; 98DK-00001164.

XX XX 02-OCT-1998; 98US-0102896P.

XX PA (MEBI-) M & E BIOTECH AS.

XX XX Halkier T, Haaning J;

XX XX WFI; 2000-271444/23.

XX DR N-PSDB; AAZ99973.

XX XX

PT In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.

XX PS Example; Page 102; 110pp; English.

XX CC The present sequence represents fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P30 epitope. Osteoprotegerin is a
 CC secreted member of the tumour necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption

XX SQ Sequence 173 AA;

Query Match 100.0%; Score 112; DB 3; Length 173;
 Best Local Similarity 100.0%; Pred. No. 8.6e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 78 FNNFTVSFWLRVPKVSASHLE 98

RESULT 138

AAY84423

ID AAY84423 standard; protein; 188 AA.

XX AC AAY84423;

XX DT 25-JUL-2000 (first entry)

XX DE An osteoprotegerin ligand/tetanus toxoid P30 epitope fusion protein.

XX KW Osteoprotegerin ligand; OPGL; osteoprotegerin; osteoclastogenesis;
 XX KW tumour necrosis factor receptor; type II transmembrane protein;
 XX KW osteoclast differentiation; CSF-1; osteoclast activator; immune response;
 XX KW osteoporosis; bone resorption.

XX OS Synthetic.
 XX OS Clostridium tetani.
 XX OS Mus musculus.

XX FH Key Location/Qualifiers
 XX FT Peptide 1..14
 XX FT Protein /note= "His tag"
 XX FT Protein /note= "residues 158-255 of murine OPGL"
 XX FT Peptide 113..133
 XX FT Protein /note= "tetanus toxoid P30 epitope"
 XX FT Protein 134..188
 XX FT Protein /note= "residues 262-316 of murine OPGL"

XX PN W0200015807-A1.

XX XX 23-MAR-2000.

XX XX 13-SEP-1999; 99WO-DK000481.

XX XX 15-SEP-1998; 98DK-00001164.

XX XX 02-OCT-1998; 98US-0102896P.

XX PA (MEBI-) M & E BIOTECH AS.

XX XX Halkier T, Haaning J;

XX WPI; 2000-271444/23.
 DR N-PSDB; AAZ99970.
 XX
 PT In vivo down-regulation of osteoprotegerin ligand (OPGL) activity used to
 PT treat, prevent and ameliorate osteoporosis.
 XX
 PS Example; Page 94-95; 110pp; English.

XX The present sequence represents fusion protein of murine osteoprotegerin
 CC ligand (OPGL) and tetanus toxoid P30 epitope. Osteoprotegerin is a
 CC secreted member of the tumor necrosis factor receptor family, which
 CC blocks osteoclastogenesis in a dose dependent manner. The OPGL protein is
 CC synthesised as a type II transmembrane protein. The murine and human OPGL
 CC polypeptides are 87% homologous. OPGL is a potent osteoclast
 CC differentiation factor when combined with CSF-1. It is not capable of
 CC inducing osteoclast differentiation in the absence of CSF-1. OPGL is also
 CC an activator of mature osteoclasts. The specification describes a method
 CC for the in vivo down-regulation of OPGL activity in an animal. The method
 CC comprises using at least one OPGL polypeptide or subsequence, and/or at
 CC least one OPGL analogue to induce an immune response in the animal. The
 CC method and OPGL polypeptide are useful for treating, preventing and
 CC ameliorating osteoporosis or other diseases or conditions characterised
 CC by excessive bone resorption
 XX

SQ Sequence 188 AA;

Query Match 100.0%; Score 112; DB 3; Length 188;
 Best Local Similarity 100.0%; Pred. No. 9.5e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 113 FNNFTVSFWLRVPKVSASHLE 133

RESULT 139

AAO30489
 ID AAO30489 standard; protein; 194 AA.

AC AAO30489;

XX 22-SEP-2003 (first entry)

XX Human TNFalpha variant, TNF34-P30-P2.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW mutein; variant; tetanus toxoid; epitope.

XX Homo sapiens.
 OS Unidentified.
 OS Chimeric.

Key	Location/Qualifiers
Region	1..109
FT	/note= "Human TNF"
FT	Region 110..130
FT	/note= "Tetanus toxoid P30 epitope"
FT	Region 131..145
FT	/note= "Tetanus toxoid P2 epitope"
FT	Region 146..194
FT	/note= "Human TNF"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX

PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.

XX Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 DR WPI; 2003-449558/42.
 XX

XX New immunogenic analogue of a polymorphic protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.

XX Claim 23; Page 159-160; 196pp; English.

XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC an inserted tetanus toxoid P2 and P30 epitopes. This sequence is used to
 CC illustrate the method of the invention
 XX

SQ Sequence 194 AA;

Query Match 100.0%; Score 112; DB 6; Length 194;
 Best Local Similarity 100.0%; Pred. No. 9.8e-11;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 110 FNNFTVSFWLRVPKVSASHLE 130

RESULT 140

AAO30488
 ID AAO30488 standard; protein; 194 AA.

AC AAO30488;

XX 22-SEP-2003 (first entry)

XX Human TNFalpha variant, TNF34-P2-P30.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW mutein; variant; tetanus toxoid; epitope.

XX Homo sapiens.
 OS Unidentified.
 OS Chimeric.

Key	Location/Qualifiers
Region	2..109
FT	/note= "Human TNF"
FT	Region 110..124
FT	/note= "Tetanus toxoid P2 epitope"
FT	Region 125..145
FT	/note= "Tetanus toxoid P30 epitope"
FT	Region 146..194
FT	/note= "Human TNF"

XX WO2003042244-A2.

XX 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

XX

XX PF 05-OCT-1999; 99WO-DK000525.
 XX PR 05-OCT-1998; 98DK-00001261.
 XX PR 20-OCT-1998; 98US-0105011P.
 XX PA (MEBI-) M & E BIOTECH AS.
 XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 XX PI Gautam A, Birk P, Karlsson G;
 XX PR WPI; 2000-349917/30.
 XX PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 XX PT antigens for the treatment of breast and prostate cancer.
 XX PS Example 4; Page; 220pp; English.
 XX CC This is an immunogenized MUC-1 analogue containing foreign epitopes P2
 CC and P30. Immunogenic analogues of MUC-1 and, e.g. human prostate specific
 CC membrane antigen (hPSM) can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms (see features table). 10 regions
 CC suitable for the insertion of foreign T helper epitopes were identified.
 CC The method is used for inducing immune responses against weakly
 CC immunogenic cell-associated peptide antigens (PA) such as those
 CC associated with cancers (self-proteins), e.g. hPSM, heregulin 2 (Her2)
 CC and/or fibroblast growth factor 8b (FGF8b). The method comprises
 CC effecting simultaneous presentation by antigen producing cells (APCs) of
 CC the animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence does not appear in
 CC the specification. It was made using the mucin repeat sequence
 CC (AA92664), P2 and P30 (AA92625-26), which appear on pages 220, 213 and
 XX 214 respectively, of the specification
 XX SQ Sequence 216 AA;
 Query Match 100.0%; Score 112; DB 3; Length 216;
 Best Local Similarity 100.0%; Pred. No. 1.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 136 FNNFTVSFWLRVPKVSASHLE 156
 RESULT 143
 AAY49253
 ID AAY49253 standard; protein; 218 AA.
 XX AC AAY49253;
 XX DT 07-FEB-2000 (first entry)
 XX DE N10 polypeptide carrier protein construct amino acid sequence.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX DT 07-FEB-2000 (first entry)
 XX DE N10 polypeptide carrier protein construct amino acid sequence.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 XX PT diseases caused by encapsulated bacteria.

PF 27-APR-1999; 99WO-IB000844.
 XX PR 27-APR-1998; 98GB-00008932.
 XX PA (CHIR-) CHIRON SPA.
 XX PI Rappuoli R, Grandi G;
 XX PI WPI; 2000-023325/02.
 XX PR N-PSDB; AAZ31415.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 XX PT diseases caused by encapsulated bacteria.
 XX PS Disclosure; Fig 2; 76pp; English.
 XX CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. The present sequence represents the amino acid sequence of N10
 CC polypeptide carrier protein construct
 XX SQ Sequence 218 AA;
 Query Match 100.0%; Score 112; DB 3; Length 218;
 Best Local Similarity 100.0%; Pred. No. 1.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 103 FNNFTVSFWLRVPKVSASHLE 123
 RESULT 144
 AAY49254
 ID AAY49254 standard; protein; 240 AA.
 XX AC AAY49254;
 XX DT 07-FEB-2000 (first entry)
 XX DE N11 polypeptide carrier protein construct amino acid sequence.
 XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen; N11;
 XX KW encapsulated bacteria.
 XX OS Synthetic.
 XX PN WO9955730-A2.
 XX PD 04-NOV-1999.
 XX DT 27-APR-1999; 99WO-IB000844.
 XX PR 27-APR-1998; 98GB-00008932.
 XX PA (CHIR-) CHIRON SPA.
 XX PI Rappuoli R, Grandi G;
 XX PI WPI; 2000-023325/02.
 XX PR N-PSDB; AAZ31416.
 XX PT Carrier proteins containing CD4+ epitopes useful for protecting against
 XX PT diseases caused by encapsulated bacteria.

XX Disclosure; Fig 7; 76pp; English.

XX

CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. The present sequence represents the amino acid sequence of N11
 CC polypeptide carrier protein construct

XX SQ Sequence 240 AA;

Query Match 100.0%; Score 112; DB 3; Length 240;
 Best Local Similarity 100.0%; Pred. No. 1.3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSWLRVPKVSASHLE 21
 |||||

Db 103 FNNFTVSWLRVPKVSASHLE 123
 |||||

RESULT 145

AAB20152

ID AAB20152 standard; protein; 254 AA.

XX

AC AAB20152;

XX

DT 30-APR-2001 (first entry)

XX

DE Growth differentiation factor 8 AutoVac construct GDF-8 dimer.

XX

KW Growth differentiation factor 8; GDF-8; myostatin; tetanus toxin;
 KW T-cell epitope; down-regulation; vaccine; muscle; meat; cachexia;
 KW cardiant; human; mutant; mutein.

XX

OS Homo sapiens.

OS Clostridium tetani.

OS Synthetic.

OS Chimeric.

XX

FH Key Location/Qualifiers

FT Region 1..109

FT Misc-difference /note= "109 C-terminal residues of human GDF-8"

FT Region 90..91

FT Region /note= "optionally replaced by Glu-Gly"

FT Region 110..124

FT Region /note= "tetanus toxoid P2 epitope"

FT Region 125..145

FT Region /note= "tetanus toxoid P30 epitope"

FT Region 146..254

FT Misc-difference /note= "109 C-terminal residues of human GDF-8"

FT Region 235..236

FT Region /note= "optionally replaced by Glu-Gly"

XX

PN WO200105820-A2.

XX

XX 25-JAN-2001.

XX

XX 20-JUL-2000; 2000WO-DK000413.

XX

PR 20-JUL-1999; 99DK-00001014.

PR 26-JUL-1999; 99US-0145275P.

XX

XX (MEBI-) M & E BIOTECH AS.

XX Halkier T, Mouritsen S, Klysner S;

PI

XX WPI; 2001-112680/12.

XX

PT Increasing the muscle mass of animals used in meat production by down
 PT regulating growth differentiation factor 8 (GDF-8) activity in the animal
 PT through induction of anti-GDF-8 antibody production.

XX

PS Example 1; Page 105-106; 110pp; English.

XX

CC The present sequence is that of AutoVac construct GDF-8 dimer comprising
 CC 2 copies of the 109-amino acid C-terminal region of human growth
 CC differentiation factor 8 (GDF-8, see AAB20141) covalently connected
 CC through the P2 and P30 T-cell epitopes (see AAB20143-44) of tetanus
 CC toxin. It is an object of the invention to produce a recombinant
 CC therapeutic vaccine that is capable of effecting down-regulation of GDF-8
 CC in order to increase the muscle growth rate of farm animals. The vaccines
 CC (see AAB20145-53) are capable of breaking autotolerance against
 CC autologous GDF-8. They comprise the C-terminal portion of human GDF-8 in
 CC which a portion of the native sequence is replaced by a T-cell epitope
 CC such as P30, with minimal disturbance of the authentic 3-dimensional
 CC structure of the protein. Nucleic acids encoding the GDF-8 variants can
 CC be used for genetic immunisation of the animals. Down-regulation of GDF-8
 CC activity can increase muscle mass by up to at least 45% in cattle, pigs
 CC and poultry used for meat production, reducing the need for antibiotic
 CC feed-additives. Anti-GDF8 vaccines can be used to treat human diseases
 CC such as cancer cachexia where muscle atrophy is pronounced and for
 CC patients suffering from acute and chronic heart failure

XX SQ Sequence 254 AA;

Query Match 100.0%; Score 112; DB 4; Length 254;
 Best Local Similarity 100.0%; Pred. No. 1.3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSWLRVPKVSASHLE 21
 |||||

Db 125 FNNFTVSWLRVPKVSASHLE 145
 |||||

RESULT 146

AAO30457

ID AAO30457 standard; protein; 285 AA.

XX

AC AAO30457;

XX

DT 22-SEP-2003 (first entry)

XX

DE hIL5-P30-P2-hIL5 (hIL5.34) fusion construct protein.

XX

KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.

XX

OS Homo sapiens.

OS Unidentified.

OS Chimeric.

XX

FH Key Location/Qualifiers

FT Peptide 1..19

FT /note= "Human IL5 leader peptide"

FT Protein 20..285

FT /note= "Mature hIL5.34 protein"

XX

PN WO2003042244-A2.

XX

XX 22-MAY-2003.

XX

XX 15-NOV-2002; 2002WO-DK000764.

XX

PR 16-NOV-2001; 2001DK-00001702.

PR 16-NOV-2001; 2001US-0331575P.

XX

PA (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 XX WPI; 2003-449558/42.
 DR N-PSDB; AAL61293.
 XX
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 PT
 XX
 PS Claim 20; Page 109-110; 196pp; English.
 XX
 XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises
 CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the
 CC invention
 CC
 XX
 SQ Sequence 285 AA;
 Query Match 100.0%; Score 112; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. NO. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 135 FNNFTVSFWLRVPKVSASHLE 155
 RESULT 147
 AAO30458
 ID AAO30458 standard; protein; 285 AA.
 XX
 AC AAO30458;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE hIL5-P2-P30-hIL5 (hIL5.35) fusion construct protein.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..285
 FT /note= "Mature hIL5.35 protein"
 FT Region 24..44
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P2 epitope"
 XX
 PN WO2003042244-A2.
 XX
 PD 22-MAY-2003.
 XX
 PF 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.

PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 XX WPI; 2003-449558/42.
 DR N-PSDB; AAL61294.
 XX
 XX New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 PT
 XX
 PS Claim 20; Page 112-113; 196pp; English.
 XX
 XX The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct which comprises
 CC 2 human interleukin 5 (IL5) monomers joined by tetanus toxoid epitopes
 CC P30 and P2. This sequence is used to illustrate the method of the
 CC invention
 CC
 XX
 SQ Sequence 285 AA;
 Query Match 100.0%; Score 112; DB 6; Length 285;
 Best Local Similarity 100.0%; Pred. NO. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 150 FNNFTVSFWLRVPKVSASHLE 170
 RESULT 148
 AAO30459
 ID AAO30459 standard; protein; 287 AA.
 XX
 AC AAO30459;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE hIL5.36 variant protein.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..287
 FT /note= "Mature hIL5.36 protein"
 FT Region 24..44
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P2 epitope"
 XX
 PN WO2003042244-A2.
 XX
 PD 22-MAY-2003.
 XX
 PF 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 XX (PHAR-) PHARMEXA AS.

PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61295.
 XX
 FT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 20; Page 115-117; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which
 CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 287 AA;
 Query Match 100.0%; Score 112; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 24 FNNFTVSFWLRVPKVSASHLE 44
 RESULT 149
 AAO30460
 ID AAO30460 standard; protein; 287 AA.
 AC AAO30460;
 XX
 DT 22-SEP-2003 (first entry)
 XX
 DE hIL5.37 variant protein.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; interleukin 5;
 KW IL5; epitope; human; tetanus toxoid; chimeric; variant; mutant; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Peptide 1..19
 FT /note= "Human IL5 leader peptide"
 FT Protein 20..287
 FT /note= "Mature hIL5.37 protein"
 FT Region 24..38
 FT /note= "Tetanus toxoid P2 epitope"
 FT Region 273..287
 FT /note= "Tetanus toxoid P30 epitope"
 XX
 PN WO2003042244-A2.
 XX
 PD 22-MAY-2003.
 XX
 PF 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.

XX (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDORGB B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klysner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61296.
 XX
 FT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 20; Page 117-120; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is a fusion construct variant which
 CC comprises 2 human interleukin 5 (IL5) monomers joined by diglycine linker
 CC and including terminally positioned tetanus toxoid epitopes P30 and P2.
 CC This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 287 AA;
 Query Match 100.0%; Score 112; DB 6; Length 287;
 Best Local Similarity 100.0%; Pred. No. 1.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 267 FNNFTVSFWLRVPKVSASHLE 287
 RESULT 150
 ADL64008
 ID ADL64008 standard; protein; 385 AA.
 XX
 AC ADL64008;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Protein encoded by the expression plasmid pCDNmlL13p30FC.
 XX
 KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW murine; peptide p30.
 XX
 XX Mus sp.
 OS Clostridium tetani.
 OS Cytomegalovirus.
 OS Synthetic.
 OS Unidentified.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 235..239
 FT /note= "Encoded for by AACCGT"
 XX
 PN WO2004019974-A2.
 XX
 PD 11-MAR-2004.
 XX
 PF 28-AUG-2003; 2003WO-GB003703.
 XX
 PR 30-AUG-2002; 2002GB-00020212.

```

PR 28-FEB-2003; 2003GB-00004672.
XX (GLAX ) GLAXO GROUP LTD.
PA (ASHM/) ASHMAN C.
XX
XX Ashman C, Ellis JH;
XX WPI; 2004-239121/22.
DR N-PSDB; ADL63996.
XX
PT New immunogenic composition comprising an interleukin-13 (IL-13) element
PT that drives an immune response recognizing human IL-13 and foreign T-cell
PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
XX
XX Disclosure; Fig 18; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC is the pCDNmlil3p30FC expression plasmid protein sequence of the chimeric
CC murine IL-13 protein and the tetani p30 peptide under the control of a
CC CMV promoter of the invention. NOTE: This sequence is given in the figure
CC but is not further referred to in the specification.
XX
XX SQ Sequence 385 AA;
XX
XX Query Match 100.0%; Score 112; DB 8; Length 385;
XX Best Local Similarity 100.0%; Pred. No. 2.1e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX |||||
XX Db 97 FNNFTVSFWLRVPKVSASHLE 117
XX
XX RESULT 151
XX ADL63969
XX ID ADL63969 standard; protein; 385 AA.
XX
XX AC ADL63969;
XX
XX DT 03-JUN-2004 (first entry)
XX
XX DE Protein encoded by the expression plasmid pCDNmlil3p30FC.
XX
XX KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
XX KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
XX KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
XX KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
XX KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
XX KW murine; peptide p30.
XX
XX OS Mus sp.
XX OS Clostridium tetani.
XX OS Cytomegalovirus.
XX OS Synthetic.
XX OS Unidentified.
XX
XX FH Key Location/Qualifiers
XX FT Misc-difference 235..239

```

```

FT
XX
XX PN WO2004019975-A2.
XX
XX PD 11-MAR-2004.
XX
XX XX 28-AUG-2003; 2003WO-GB003729.
XX
XX XX 30-AUG-2002; 2002GB-00020211.
XX
XX PR 28-FEB-2003; 2003GB-00004672.
XX
XX XX (GLAX ) GLAXO GROUP LTD.
XX
XX PI Ellis JH, Ashman C;
XX
XX DR WPI; 2004-239122/22.
XX
XX DR N-PSDB; ADL63920.
XX
XX New vaccine composition useful for treating asthma, Chronic obstructive
PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
PT immunogen generating an immune response against interleukin-13.
XX
XX Disclosure; Fig 18; 89pp; English.
XX
XX This invention relates to a novel immunogenic composition comprising an
CC IL-13 (interleukin-13) element that is capable of driving an immune
CC response by recognising human IL-13 and one or more foreign T-cell
CC epitopes. Specifically, it refers to a method for producing a human
CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
CC a human vaccine. The present invention describes human chimeric IL-13
CC sequences as having a similar conformational shape to native human IL-13
CC while having sufficient amino acid sequence diversity, attributable to
CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
CC the method results in a reduction in airway hyper-responsiveness (AHR),
CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
CC the airways and skin irritation, as well as reducing the requirement for
CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
CC dermatological and antiasthmatic activities, can be used via gene therapy
CC to treat individuals suffering from or susceptible to chronic obstructive
CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
CC is the pCDNmlil3p30FC expression plasmid protein sequence of the chimeric
CC murine IL-13 protein and the tetani p30 peptide under the control of a
CC CMV promoter of the invention. NOTE: This sequence is given in the figure
CC but is not further referred to in the specification.
XX
XX SQ Sequence 385 AA;
XX
XX Query Match 100.0%; Score 112; DB 8; Length 385;
XX Best Local Similarity 100.0%; Pred. No. 2.1e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX |||||
XX Db 97 FNNFTVSFWLRVPKVSASHLE 117
XX
XX RESULT 152
XX AAY49255
XX ID AAY49255 standard; protein; 390 AA.
XX
XX AC AAY49255;
XX
XX XX 07-FEB-2000 (first entry)
XX
XX DE N19 polypeptide carrier protein construct amino acid sequence.
XX
XX KW Carrier protein; CD4+; T cell epitope; N6; N10; N19; immunogen;
XX KW encapsulated bacteria.
XX
XX OS Synthetic.
XX
XX XX WO9955730-A2.
XX
XX

```

PD 04-NOV-1999.
 XX 27-APR-1999; 99WO-IB000844.
 XX 27-APR-1998; 98GB-00008932.
 XX (CHIR-) CHIRON SPA.
 XX Rappuoli R, Grandi G;
 XX WPI; 2000-023325/02.
 DR N-PSDB; AAZ31417.
 XX
 PT Carrier proteins containing CD4+ epitopes useful for protecting against
 PT diseases caused by encapsulated bacteria.
 XX
 PS Disclosure; Fig 8; 76pp; English.
 XX
 CC The invention provides carrier proteins comprising at least 5 CD4+ T cell
 CC epitope. The carrier protein comprises at least 1 of N6, N10 or N19. The
 CC carrier protein can be prepared by expressing a vector comprising a
 CC nucleic acid molecule encoding the protein, in a host cell and recovering
 CC the expressed protein. The carrier protein can also be produced by (a)
 CC constructing oligonucleotide molecules that encode peptide epitopes; (b)
 CC annealing the oligonucleotides to form duplexes; (c) introducing the
 CC duplexes into an expression vector; (d) introducing the expression vector
 CC into a host cell; and (e) isolating the fusion protein produced from a
 CC culture of the host cells. The carrier protein can be used as a
 CC protective immunogen in the control of diseases caused by encapsulated
 CC bacteria. The present sequence represents the amino acid sequence of N19
 CC polypeptide carrier protein construct
 XX
 SQ Sequence 390 AA;
 Query Match 100.0%; Score 112; DB 3; Length 390;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 103 FNNFTVSFWLRVPKVSASHLE 123
 RESULT 153
 ADL64009
 ID ADL64009 standard; protein; 394 AA.
 AC ADL64009;
 DT 03-JUN-2004 (first entry)
 DE Protein encoded by the expression plasmid pCDNMIL13p30.
 KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW murine; peptide p30.
 XX
 OS Mus sp.
 OS Clostridium tetani.
 OS Cyomegalovirus.
 OS Synthetic.
 OS Unidentified.
 XX
 FH Key Location/Qualifiers
 FT Misc-difference 158 /note= "Encoded by CCC"
 FT
 XX WO2004019974-A2.
 PN 11-MAR-2004.
 PD

XX 28-AUG-2003; 2003WO-GB003703.
 PF 30-AUG-2002; 2002GB-00020212.
 XX 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 XX
 PI Ashman C, Ellis JH;
 XX WPI; 2004-239121/22.
 DR N-PSDB; ADL63997.
 XX
 PT New immunogenic composition comprising an interleukin-13 (IL-13) element
 PT that drives an immune response recognizing human IL-13 and foreign T-cell
 PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 XX
 PS Disclosure; Fig 19; 89pp; English.
 XX
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNMIL13p30 expression plasmid protein sequence of the chimeric
 CC murine IL-13 protein and the tetani p30 peptide under the control of a
 CC CMV promoter of the invention. NOTE: This sequence is given in the figure
 CC but is not further referred to in the specification.
 XX
 SQ Sequence 394 AA;
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 154
 ADL64010
 ID ADL64010 standard; protein; 394 AA.
 XX
 AC ADL64010;
 XX
 DT 03-JUN-2004 (first entry)
 DE Protein encoded by the expression plasmid pCDNMIL13p30newFC.
 KW immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
 KW AHR; mucus hyper-secretion; goblet cell metaplasia;
 KW sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
 KW dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis.
 XX
 OS Synthetic.
 OS Unidentified.
 XX
 PN WO2004019974-A2.
 PD

PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003703.
 XX 30-AUG-2002; 2002GB-00020212.
 PR 28-FEB-2003; 2003GB-00004672.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 PA (ASHM/) ASHMAN C.
 PI Ashman C, Ellis JH;
 XX WPI; 2004-239121/22.
 DR N-PSDB; ADL63999.
 XX
 PT New immunogenic composition comprising an interleukin-13 (IL-13) element
 PT that drives an immune response recognizing human IL-13 and foreign T-cell
 PT epitopes, useful in treating, e.g. asthma or atopic dermatitis.
 XX
 PS Disclosure; Fig 20; 89pp; English.
 XX
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNcIL13p30newFC expression plasmid protein sequence of the
 CC invention. NOTE: This sequence is given in the figure but is not further
 CC referred to in the specification.
 XX
 SQ Sequence 394 AA;
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 155
 ADL63971
 ID ADL63971 standard; protein; 394 AA.
 XX
 AC ADL63971;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Protein encoded by the expression plasmid pCDNcIL13p30newFC.
 XX
 KW immunogenic; IL-13; interleukin-13; vaccine; airway hyper-responsiveness;
 KW AHR; mucus hyper-secretion; goblet cell metaplasia;
 KW sub-epithelial fibrosis; skin irritation; inhaled corticosteroid; ICS;
 KW dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis.
 XX
 XX Synthetic.
 OS Unidentified.
 OS WO2004019975-A2.
 FN
 XX

PD 11-MAR-2004.
 XX 28-AUG-2003; 2003WO-GB003729.
 XX 30-AUG-2002; 2002GB-00020211.
 PR 28-FEB-2003; 2003GB-00004672.
 XX (GLAX) GLAXO GROUP LTD.
 PA
 XX Ellis JH, Ashman C;
 PI WPI; 2004-239122/22.
 DR N-PSDB; ADL63923.
 XX
 PT New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX
 PS Disclosure; Fig 20; 89pp; English.
 XX
 CC This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNcIL13p30newFC expression plasmid protein sequence of the
 CC invention. NOTE: This sequence is given in the figure but is not further
 CC referred to in the specification.
 XX
 SQ Sequence 394 AA;
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 156
 ADL63970
 ID ADL63970 standard; protein; 394 AA.
 XX
 AC ADL63970;
 XX
 DT 03-JUN-2004 (first entry)
 XX
 DE Protein encoded by the expression plasmid pCDNcIL13p30.
 XX
 KW mouse; immunogenic; IL-13; interleukin-13; vaccine;
 KW airway hyper-responsiveness; AHR; mucus hyper-secretion;
 KW goblet cell metaplasia; sub-epithelial fibrosis; skin irritation;
 KW inhaled corticosteroid; ICS; dermatological; antiasthmatic; gene therapy;
 KW chronic obstructive pulmonary disease; COPD; asthma; atopic dermatitis;
 KW murine; peptide p30.
 XX
 XX Mus sp.
 OS Clostridium tetani.
 OS Cytomegalovirus.
 OS Synthetic.
 OS Unidentified.

XX Key Location/Qualifiers
 FH Misc-difference 158
 FT /note= "Encoded by CCC"
 XX
 XX WO2004019975-A2.
 XX
 XX 11-MAR-2004.
 XX
 XX 28-AUG-2003; 2003WO-GB003729.
 XX
 XX 30-AUG-2002; 2002GB-00020211.
 XX
 XX 28-FEB-2003; 2003GB-00004672.
 XX
 XX (GLAX) GLAXO GROUP LTD.
 XX
 XX Ellis JH, Ashman C;
 XX
 XX WPI; 2004-239122/22.
 XX
 XX N-PSDB; ADL63921.
 XX
 XX New vaccine composition useful for treating asthma, Chronic obstructive
 PT pulmonary disease or atopic disorders, e.g. dermatitis, comprises an
 PT immunogen generating an immune response against interleukin-13.
 XX
 XX Disclosure; Fig 19; 89pp; English.
 XX
 XX This invention relates to a novel immunogenic composition comprising an
 CC IL-13 (interleukin-13) element that is capable of driving an immune
 CC response by recognising human IL-13 and one or more foreign T-cell
 CC epitopes. Specifically, it refers to a method for producing a human
 CC chimeric IL-13 immunogen formulated in an appropriate manner to generate
 CC a human vaccine. The present invention describes human chimeric IL-13
 CC sequences as having a similar conformational shape to native human IL-13
 CC while having sufficient amino acid sequence diversity, attributable to
 CC non-human mammalian species, to enhance its immunogenicity. Accordingly,
 CC the method results in a reduction in airway hyper-responsiveness (AHR),
 CC mucus hyper-secretion, goblet cell metaplasia, sub-epithelial fibrosis of
 CC the airways and skin irritation, as well as reducing the requirement for
 CC inhaled corticosteroids (ICS). As such, these compositions, which exhibit
 CC dermatological and antiasthmatic activities, can be used via gene therapy
 CC to treat individuals suffering from or susceptible to chronic obstructive
 CC pulmonary disease (COPD), asthma or atopic dermatitis. This polypeptide
 CC is the pCDNmiLi3p30 expression plasmid protein sequence of the chimeric
 CC murine IL-13 protein and the tetani p30 peptide under the control of a
 CC CMV promoter of the invention. NOTE: This sequence is given in the figure
 CC but is not further referred to in the specification.
 XX
 XX Sequence 394 AA;
 SQ
 Query Match 100.0%; Score 112; DB 8; Length 394;
 Best Local Similarity 100.0%; Pred. No. 2.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 157
 AAR12471
 ID AAR12471 standard; protein; 452 AA.
 XX
 XX AAR12471;
 XX
 XX 25-MAR-2003 (revised)
 DT 05-AUG-1991 (first entry)
 XX
 XX Tetanus toxin fragment C encoded by gene with increased G+C content.
 DE Terminator; vaccine.
 KW
 XX Synthetic.

XX EP430645-A.
 XX
 XX 05-JUN-1991.
 XX
 XX 27-NOV-1990; 90EP-00312870.
 XX
 XX 28-NOV-1989; 89GB-00026832.
 PR 17-MAR-1990; 90GB-00006097.
 XX
 XX (WELL) WELLCOME FOUND LTD.
 XX
 XX Makoff AJ, Romanos MA, Clare JJ, Fairweather NP;
 PI WPI; 1991-166115/23.
 XX
 XX N-PSDB; AAQ12121.
 DR
 XX DNA sequence encoding tetanus toxin fragment C - useful in the
 PT manufacture of vaccines for immunity to tetanus utilising yeast as host
 PT organism.
 XX
 XX Disclosure; Fig 2; 50pp; English.
 PS
 XX The (G+C) content of the synthetic gene is increased by 47% wrt the
 CC native sequence. This eliminates six "terminator" regions which were
 CC found to be present in (A+T) rich regions. The terminators
 CC (termination/endo-nucleolytic processing/polyadenylation sites) were
 CC previously responsible for incomplete transcription of the mRNA. The
 CC elimination of these elements (using codon degeneracy) provided for
 CC successful expression in yeast of the tetanus toxin fragment C. (Updated
 CC on 25-MAR-2003 to correct PA field.)
 XX
 XX Sequence 452 AA;
 SQ
 Query Match 100.0%; Score 112; DB 2; Length 452;
 Best Local Similarity 100.0%; Pred. No. 2.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 84 FNNFTVSFWLRVPKVSASHLE 104
 RESULT 158
 AAB31427
 ID AAB31427 standard; protein; 453 AA.
 XX
 XX AAB31427;
 AC
 XX 20-APR-2001 (first entry)
 DT
 XX Amino acid sequence of tetanus toxin fragment C.
 DE
 XX Vaccine; shed antigen-specific B cell; idiotypic antibody;
 KW immune complex-mediated disease; autoimmune disease; tetanus protein;
 KW humoral immune response; cancer.
 XX
 XX Clostridium tetani.
 OS
 XX WO200076319-A1.
 PN
 XX 21-DEC-2000.
 PD
 XX 16-JUN-2000; 2000WO-US016677.
 PF
 XX 16-JUN-1999; 99US-0139521P.
 PR 15-JUN-2000; 2000US-00594985.
 PR
 XX (BIOC-) BIOCRYSTAL LTD.
 XX
 XX Nelson MB, Barbera-Guillem E;
 PI WPI; 2001-080635/09.
 DR

XX Inducing an immune response against shed antigen-specific B cell
 PT idiotypes, by administering a vaccine formulation comprising
 PT polynucleotides encoding an idiotype determinant or peptides comprising
 PT an idiotype determinant.

XX Example 2; Page 72-73; 81pp; English.

XX The present sequence represents a fragment of tetanus protein, which is
 CC used as an immunostimulatory protein in vaccines of the invention. The
 CC specification describes a method for inducing an immune response reactive
 CC with idiotypes present on shed antigen-specific B cells (SAB) of an
 CC individual. The method involves administering a vaccine formulation
 CC comprising polynucleotide encoding an idiotype of an antibody that binds
 CC to an epitope of shed antigen. The method is useful for inducing an
 CC immune response reactive with idiotypes present on SAB of an individual.
 CC The method is useful for depleting shed antigen-specific B cells, and for
 CC treating immune complex-mediated disease progression in organ specific
 CC autoimmune disease exacerbated by humoral immune response against groups
 CC expressed on shed antigen, or by plasma cell production of antibodies
 CC against groups of shed antigen. It is useful in cancer therapy and for
 CC treating autoimmune disease

XX Sequence 453 AA;

Query Match 100.0%; Score 112; DB 4; Length 453;
 Best Local Similarity 100.0%; Pred. No. 2.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 85 FNNFTVSFWLRVPKVSASHLE 105
 |||||

RESULT 159

AA000921
 ID AAY00921 standard; protein; 463 AA.

XX AC AAY00921;

XX DT 28-MAY-1999 (first entry)

XX Tetanus toxin fragment C protein sequence.

XX Tetanus toxin fragment C; TTC; central nervous system; CNS; spinal cord;
 KW proteolytic fragment; retrograde axonal transport; spinal cord disease;
 KW transsynaptic transport; neurodegenerative disease; motoneuron disease;
 KW amyotrophic lateral sclerosis; spinal muscular atrophy; therapy; ALS;
 KW SMA; neurodegenerative lysosomal storage disease; neuronal mapping.

XX Clostridium tetani.

XX WO9909057-A2.

XX PD 25-FEB-1999.

XX 12-AUG-1998; 98WO-EP005113.

XX 14-AUG-1997; 97US-0055615P.

XX 13-NOV-1997; 97US-0065236P.

XX (INSP) INST PASTEUR.

XX Coen L, Osta Pinzolas R, Brulet P;

XX WPI; 1999-180971/15.

XX N-PSDB; AAX27234.

XX Delivery of a composition to the central nervous system or spinal cord -
 PT comprises administration of a non-toxic, proteolytic fragment of tetanus
 PT toxin in association with a molecule having biological function.

XX Example 1; Fig 1; 53pp; English.

XX This sequence represents the tetanus toxin fragment C (TTC). The
 CC invention relates to a method for in vivo delivery of a desired
 CC composition into a human or animal central nervous system (CNS) or spinal
 CC cord comprising administering a non-toxic, proteolytic fragment of tetanus
 CC toxin (TT) in association with at least a molecule having a biological
 CC function and where the composition is capable of in vivo retrograde
 CC axonal transport and transsynaptic transport into the CNS or the spinal
 CC cord of the human or animal and of being delivered to different areas of
 CC the CNS or the spinal cord. The method can be used for the treatment of
 CC humans or animals with CNS or spinal cord disease, e.g. neurodegenerative
 CC and motoneuron diseases such as amyotrophic lateral sclerosis (ALS),
 CC spinal muscular atrophies (SMA) or neurodegenerative lysosomal storage
 CC diseases. Compositions comprising hybrid fragments of TT comprising
 CC fragments C and B can also be used for neuronal mapping and
 CC immunisations. Use of TT comprising fragments A, B and C results in
 CC better transport of the fragment inside the organism compared with
 CC fragment C

XX Sequence 463 AA;

Query Match 100.0%; Score 112; DB 2; Length 463;
 Best Local Similarity 100.0%; Pred. No. 2.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 95 FNNFTVSFWLRVPKVSASHLE 115
 |||||

RESULT 160

AA030491

ID AAO30491 standard; protein; 514 AA.

XX AC AAO30491;

XX DT 22-SEP-2003 (first entry)

XX Human TNFalpha variant (TNF_T2) protein.

XX Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.

XX Homo sapiens.

XX Unidentified.

XX Chimeric.

Key	Location/Qualifiers
FT Region	2..158
FT	/note= "Human TNF"
FT Region	159..161
FT	/note= "Tri-glycine linker"
FT Region	162..182
FT	/note= "Tetanus toxoid P30 epitope"
FT Region	183..339
FT	/note= "Human TNF"
FT Region	340..342
FT	/note= "Tri-glycine linker"
FT Region	343..357
FT	/note= "Tetanus toxoid P2 epitope"
FT Region	358..514
FT	/note= "Human TNF"

XX WO2003042244-A2.

XX PD 22-MAY-2003.

XX 15-NOV-2002; 2002WO-DK000764.

XX 16-NOV-2001; 2001DK-00001702.

XX 16-NOV-2001; 2001US-0331575P.

PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDBOG B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61301.
 XX
 PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 23; Page 169-171; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
 CC epitopes. This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 514 AA;
 Query Match 100.0%; Score 112; DB 6; Length 514;
 Best Local Similarity 100.0%; Pred. No. 3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 162 FNNFTVSFWLRVPKVSASHLE 182
 RESULT 161
 AAO30490
 ID AAO30490 standard; protein; 514 AA.
 AC AAO30490;
 XX
 DT 22-SEP-2003 (first entry)
 DE Human TNFalpha variant (TNF_T1) protein.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 2..158
 FT /note= "Human TNF"
 FT Region 159..161
 FT /note= "Tri-glycine linker"
 FT Region 162..176
 FT /note= "Tetanus toxoid P2 epitope"
 FT Region 177..333
 FT /note= "Human TNF"
 FT Region 334..336
 FT /note= "Tri-glycine linker"
 FT Region 337..357
 FT /note= "Tetanus toxoid P30 epitope"
 FT Region 358..514
 FT /note= "Human TNF"
 XX
 PN WO2003042244-A2.
 XX

PD 22-MAY-2003.
 XX
 XX 15-NOV-2002; 2002WO-DK000764.
 XX
 PR 16-NOV-2001; 2001DK-00001702.
 PR 16-NOV-2001; 2001US-0331575P.
 XX
 PA (PHAR-) PHARMEXA AS.
 PA (KLYS/) KLYSNER S.
 PA (NIEL/) NIELSEN F S.
 PA (BRAT/) BRATT T.
 PA (VOLD/) VOLDBOG B.
 PA (MOUR/) MOURITSEN S.
 XX
 PI Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
 XX
 DR WPI; 2003-449558/42.
 DR N-PSDB; AAL61300.
 XX
 PT New immunogenic analogue of a polymeric protein, useful for preparing a
 PT composition for treating inflammatory diseases e.g. arthritis.
 XX
 PS Claim 23; Page 163-166; 196pp; English.
 XX
 CC The invention relates to immunogenic analogues of multimeric proteins
 CC such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
 CC factor alpha (TNF, TNFalpha) and methods for production of immunogenic
 CC analogues. The immunogenic analogue is useful for preparing a composition
 CC for treating inflammatory diseases, e.g., arthritis. It is also used in
 CC gene therapy. The present sequence is human TNFalpha variant protein with
 CC 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
 CC epitopes. This sequence is used to illustrate the method of the invention
 XX
 SQ Sequence 514 AA;
 Query Match 100.0%; Score 112; DB 6; Length 514;
 Best Local Similarity 100.0%; Pred. No. 3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 337 FNNFTVSFWLRVPKVSASHLE 357
 RESULT 162
 AAO30495
 ID AAO30495 standard; protein; 514 AA.
 AC AAO30495;
 XX
 DT 22-SEP-2003 (first entry)
 DE Human TNFalpha variant, hTNFT_4.
 XX
 KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
 KW tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
 KW variant; tetanus toxoid; epitope; mutein.
 XX
 OS Homo sapiens.
 OS Unidentified.
 OS Chimeric.
 XX
 FH Key Location/Qualifiers
 FT Region 2..158
 FT /note= "Human TNF"
 FT Region 159..161
 FT /note= "Tri-glycine linker"
 FT Region 162..318
 FT /note= "Human TNF"
 FT Region 319..321
 FT /note= "Tri-glycine linker"
 FT Region 322..336
 FT /note= "Tetanus toxoid P2 epitope"
 FT

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FT Region 337. .493
FT /note= "Human TNF"
FT Region 494. .514
FT /note= "Tetanus toxoid P30 epitope"
XX
FN WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDBOG B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX N-PSDB; AAL61305.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 191-193; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein. The
XX variant comprises 3 hTNF sequences joined by glycine linkers and tetanus
XX toxoid P2 and P30 epitopes. This sequence is used to illustrate the
XX method of the invention
XX
XX Sequence 514 AA;
XX
XX Query Match 100.0%; Score 112; DB 6; Length 514;
XX Best Local Similarity 100.0%; Pred. No. 3e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX |||||
XX 494 FNNFTVSFWLRVPKVSASHLE 514
XX
XX RESULT 163
XX AAO30492
XX ID AAO30492 standard; protein; 517 AA.
XX
XX AC AAO30492;
XX
XX DT 22-SEP-2003 (first entry)
XX
XX DE Human TNFalpha variant protein #1.
XX
XX KW Multimeric protein; interleukin 5; IL5; TNFalpha; inflammatory disease;
XX tumour necrosis factor alpha; gene therapy; arthritis; human; mutant;
XX variant; tetanus toxoid; epitope; mutein.
XX
XX OS Homo sapiens.
XX OS Unidentified.
XX OS Chimeric.
XX
XX FH Key Location/Qualifiers
XX Region 2. .158
XX /note= "Human TNF"

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FT Region 159. .161
FT /note= "Tri-glycine linker"
FT Region 162. .318
FT /note= "Human TNF"
FT Region 319. .321
FT /note= "Tri-glycine linker"
FT Region 322. .336
FT /note= "Tetanus toxoid P2 epitope"
FT Region 337. .493
FT /note= "Human TNF"
FT Region 494. .496
FT /note= "Tri-glycine linker"
FT Region 497. .517
FT /note= "Tetanus toxoid P2 epitope"
XX
XX WO2003042244-A2.
XX
XX 22-MAY-2003.
XX
XX 15-NOV-2002; 2002WO-DK000764.
XX
XX 16-NOV-2001; 2001DK-00001702.
XX 16-NOV-2001; 2001US-0331575P.
XX
XX (PHAR-) PHARMEXA AS.
XX (KLYS/) KLYSNER S.
XX (NIEL/) NIELSEN F S.
XX (BRAT/) BRATT T.
XX (VOLD/) VOLDBOG B.
XX (MOUR/) MOURITSEN S.
XX
XX Klynsner S, Nielsen FS, Bratt T, Voldborg B, Mouritsen S;
XX WPI; 2003-449558/42.
XX N-PSDB; AAL61302.
XX
XX New immunogenic analogue of a polymeric protein, useful for preparing a
XX composition for treating inflammatory diseases e.g. arthritis.
XX
XX Claim 23; Page 175-177; 196pp; English.
XX
XX The invention relates to immunogenic analogues of multimeric proteins
XX such as immunogenic variants of interleukin 5 (IL5) and tumour necrosis
XX factor alpha (TNF, TNFalpha) and methods for production of immunogenic
XX analogues. The immunogenic analogue is useful for preparing a composition
XX for treating inflammatory diseases, e.g., arthritis. It is also used in
XX gene therapy. The present sequence is human TNFalpha variant protein with
XX 3 hTNF sequences joined by glycine linkers and tetanus toxoid P2 and P30
XX epitopes. This sequence is used to illustrate the method of the invention
XX
XX Sequence 517 AA;
XX
XX Query Match 100.0%; Score 112; DB 6; Length 517;
XX Best Local Similarity 100.0%; Pred. No. 3e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX
XX Qy 1 FNNFTVSFWLRVPKVSASHLE 21
XX |||||
XX 497 FNNFTVSFWLRVPKVSASHLE 517
XX
XX Db
XX
XX RESULT 164
XX ABR82481
XX ID ABR82481 standard; protein; 537 AA.
XX
XX AC ABR82481;
XX
XX DT 20-NOV-2003 (first entry)
XX
XX DE Truncated human CEA-TT P2 and P30 epitopes.
XX
XX KW CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
XX APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.

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XX OS Synthetic.
XX PH Key Location/Qualifiers
XX FT Peptide 1..34
XX FT /note= "signal peptide"
XX FT Protein 35..537
XX FT /note= "mature protein"
XX PN WO2003059379-A2.
XX XX
XX PD 24-JUL-2003.
XX XX
XX PF 17-JAN-2003; 2003WO-DK000031.
XX XX
XX PR 17-JAN-2002; 2002DK-00000082.
XX PR 17-JAN-2002; 2002US-0350047P.
XX XX
XX PA (PHAR-) PHARMEXA AS.
XX PI Klysner S, Voldborg B;
XX XX
XX DR WPI; 2003-587260/55.
XX DR N-PSDB; ACF35968.
XX XX
XX PT Inducing an immune response in humans against autologous carcinoembryonic
XX PT antigen (CEA) comprises administering a modified CEA polypeptide, a
XX PT nucleic acid encoding the polypeptide, or a microorganism expressing the
XX PT polypeptide.
XX XX
XX PS Disclosure; Page 134-137; 140pp; English.
XX XX
XX CC The invention relates to inducing an immune response against autologous
XX CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
XX CC involves effecting uptake and processing by antigen presenting cells
XX CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
XX CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
XX CC or virus expressing the modified CEA polypeptide to induce a CTL response
XX CC and an antibody response that targets the autologous CEA. The method is
XX CC useful in immunizing actively against diseases characterized by cells
XX CC that express CEA. The present sequence represents a truncated human CEA
XX CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
XX CC in its sequence
XX SQ Sequence 537 AA;
XX XX
Query Match 100.0%; Score 112; DB 7; Length 537;
Best Local Similarity 100.0%; Pred. No. 3.1e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 513 FNNFTVSFWLRVPKVSASHLE 533

RESULT 165
AAP70345
ID AAP70345 standard; protein; 573 AA.
XX XX
XX AC AAP70345;
XX XX
XX DT 25-MAR-2003 (revised)
XX DT 22-APR-1991 (first entry)
XX XX
XX DE Portion of B fragment and all of the C fragment of tetanus toxin.
XX XX
XX KW TT; vaccine.
XX XX
XX OS Clostridium tetani.
XX XX
XX PN EP209281-A.
XX XX
XX PD 21-JAN-1987.

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XX XX 27-JUN-1986; 86EP-00305029.
XX XX
XX PR 28-JUN-1985; 85GB-00016442.
XX XX
XX PA (WELL ) WELLCOME FOUND LTD.
XX XX
XX PI Fairweathe NF;
XX XX
XX DR WPI; 1987-015999/03.
XX DR N-PSDB; AAN70545.
XX XX
XX PT Cloned DNA sequence coding for tetanus toxin - or its fragments contg.
XX PT epitope used to express antigens for vaccine prodn.
XX XX
XX PS Claim 4; Fig 1; 36pp; English.
XX XX
XX CC Gene product comprises a tetanus toxin fragment, which may be expressed
XX CC in a transformed host, and used as an antigen in vaccine production,
XX CC against the disease. (Updated on 25-MAR-2003 to correct PA field.)
XX XX
XX SQ Sequence 573 AA;
XX XX
Query Match 100.0%; Score 112; DB 1; Length 573;
Best Local Similarity 100.0%; Pred. No. 3.4e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 205 FNNFTVSFWLRVPKVSASHLE 225

RESULT 166
AAE07897
ID AAE07897 standard; protein; 605 AA.
XX XX
XX AC AAE07897;
XX XX
XX DT 11-SEP-2003 (revised)
XX DT 01-NOV-2001 (first entry)
XX XX
XX DE Modified clostridial heavy chain fragment #4.
XX XX
XX KW Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
XX KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
XX KW diphtheria neurotoxin; tetanus neurotoxin; TeNT.
XX OS Corynebacterium diphtheriae.
XX OS Clostridium tetani.
XX OS Chimeric.
XX PN WO200158936-A2.
XX XX
XX PD 16-AUG-2001.
XX XX
XX PF 04-DEC-2000; 2000WO-GB004644.
XX XX
XX PR 02-DEC-1999; 99GB-00028530.
XX PR 07-APR-2000; 2000GB-00008658.
XX XX
XX PA (MICK-) MICROBIOLOGICAL RES AUTHORITY.
XX XX
XX PI Shone CC, Sutton JM, Silman N;
XX XX
XX DR WPI; 2001-514643/56.
XX XX
XX PT New non toxic polypeptide for delivery of a therapeutic agent for the
XX PT treatment of a CNS disorder comprising a binding domain that translocates
XX PT the therapeutic agent into the neuronal cells.
XX XX
XX PS Example 2; Page 45; 50pp; English.
XX XX
XX CC The invention relates to a non toxic polypeptide, for delivery of a

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CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial neurotoxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is modified clostridial heavy chain fragment. This sequence is
 CC constructed by fusing the truncated binding domain of tetanus neurotoxin
 CC (TENT) with translocation domain of diphtheria neurotoxin. (Updated on 11
 CC -SEP-2003 to standardise OS field)
 XX
 SQ Sequence 605 AA;

Query Match 100.0%; Score 112; DB 4; Length 605;
 Best Local Similarity 100.0%; Pred. No. 3.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 235 FNNFTVSFWLRVPKVSASHLE 255

RESULT 167

AAW48909
 ID AAW48909 standard; protein; 618 AA.

XX
 AC AAW48909;

DT 17-OCT-2003 (revised)
 DT 23-SEP-1998 (first entry)

XX SOD-1/TTC hybrid protein.

XX Chimeric; copper-zinc superoxide dismutase; SOD-1; TTC; SOD-Tet451;
 KW tetanus toxin fragment C; tetanus holotoxin; nerve cell; stroke;
 KW neurological disorder; oxidative stress; brain hypoxia-reperfusion;
 KW epilepsy; Parkinson's disease; Huntington's disease.

XX Homo sapiens.

OS Clostridium tetani.

OS Chimeric.

XX Key Location/Qualifiers
 FT Region 1..163
 FT /note= "SOD-1"
 FT Region 168..618
 FT /note= "TTC moiety"

XX US5780024-A.

XX 14-JUL-1998.

XX 21-JUN-1996; 96US-00668381.

XX 23-JUN-1995; 95US-0000473P.

XX (GEHO) GEN HOSPITAL CORP.

XX (UTMA-) UNIV MARYLAND BALTIMORE.

XX Brown RH, Francis JW, Fishman PS, Hosler BA;

XX WPI; 1998-412999/35.

XX N-PSDB; AAV32580.

XX New hybrid protein of superoxide dismutase and tetanus toxin fragment C -
 PT having increased uptake by neurons and retention of enzymatic activity in
 PT these cells, for treating neurological diseases associated with oxidative

PT stress.

PS Claim 7; Col 23-26; 23pp; English.

XX The present sequence represents an enzymatically active human copper-zinc
 CC superoxide dismutase (SOD-1) fused at its carboxyl terminus with the
 CC tetanus toxin fragment C (TTC) moiety. The TTC moiety constitutes amino
 CC acid residues 865-1315 of the tetanus holotoxin. The hybrid protein,
 CC referred as SOD-Tet451, is claimed to have the following properties: (a)
 CC it exhibits Cu/Zn SOD enzymatic activity; (b) the TTC moiety selectively
 CC binds to nerve cells and allows uptake of the hybrid protein into these
 CC cells; and (c) it retains substantial SOD enzymatic activity following
 CC cellular uptake. SOD-Tet451 is claimed to be useful for treating
 CC neurological disorders associated with oxidative stress, e.g. stroke,
 CC brain hypoxia-reperfusion, epilepsy, Parkinson's and Huntington's
 CC diseases. (Updated on 17-OCT-2003 to standardise OS field)
 XX

SQ Sequence 618 AA;

Query Match 100.0%; Score 112; DB 2; Length 618;
 Best Local Similarity 100.0%; Pred. No. 3.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 250 FNNFTVSFWLRVPKVSASHLE 270

RESULT 168

AAAB31429
 ID AAB31429 standard; protein; 661 AA.

XX
 AC AAB31429;

DT 26-APR-2001 (first entry)

XX Shed antigen-specific B cell antigen linked to tetanus toxin fragment C.
 KW Vaccine; shed antigen-specific B cell; idiotypic antibody;
 KW immune complex-mediated disease; autoimmune disease; tetanus protein;
 KW humoral immune response; cancer.

XX Synthetic.

OS Clostridium tetani.

XX WO200076319-A1.

XX 21-DEC-2000.

XX 16-JUN-2000; 2000WO-US016677.

XX 16-JUN-1999; 99US-0139521P.

XX 15-JUN-2000; 2000US-00594985.

XX (BIOC-) BIOCRYSTAL LTD.

XX Nelson MB, Barbera-Guillem E;

XX WPI; 2001-080635/09.

XX Inducing an immune response against shed antigen-specific B cell
 PT idiotypes, by administering a vaccine formulation comprising
 PT polynucleotides encoding an idiotype determinant or peptides comprising
 PT an idiotype determinant.

XX Example 2; Page 73-76; 81pp; English.

XX The present sequence represents a fusion protein, comprising a protein
 CC used for immunising against shed antigen-specific B cells linked to a
 CC fragment of tetanus protein. It is used in vaccines of the invention. The
 CC specification describes a method for inducing an immune response reactive
 CC with idiotypes present on shed antigen-specific B cells (SAB) of an
 CC individual. The method involves administering a vaccine formulation

comprising polynucleotide encoding an idiotype of an antibody that binds to an epitope of shed antigen. The method is useful for inducing an immune response reactive with idiotypes present on SAb of an individual. The method is useful for depleting shed antigen-specific B cells, and for treating immune complex-mediated disease progression in organ specific autoimmune disease exacerbated by humoral immune response against groups expressed on shed antigen, or by plasma cell production of antibodies against groups of shed antigen. It is useful in cancer therapy and for treating autoimmune disease

SQ Sequence 661 AA;

Query Match 100.0%; Score 112; DB 4; Length 661;
Best Local Similarity 100.0%; Pred. No. 4e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
|||||
Db 293 FNNFTVSFWLRVPKVSASHLE 313

RESULT 169

AAE07895
ID AAE07895 standard; protein; 665 AA.

XX AC AAE07895;

DT 11-SEP-2003 (revised)

DT 01-NOV-2001 (first entry)

DE Modified clostridial heavy chain fragment #2.

KW Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
KW diphtheria neurotoxin; tetanus neurotoxin; TeNT.

XX OS Corynebacterium diphtheriae.

OS Clostridium tetani.

OS Chimeric.

XX PN W0200158936-A2.

XX PD 16-AUG-2001.

XX PF 04-DEC-2000; 2000WO-GB004644.

XX PR 02-DEC-1999; 99GB-00028530.

XX PR 07-APR-2000; 2000GB-00008658.

XX PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX PI Shone CC, Sutton JM, Silman N;

XX DR WPI; 2001-514643/56.

XX New non toxic polypeptide for delivery of a therapeutic agent for the treatment of a CNS disorder comprising a binding domain that translocates the therapeutic agent into the neuronal cells.
PS Example 2; Page 44; 50pp; English.
XX The invention relates to a non toxic polypeptide, for delivery of a therapeutic agent to a neuronal cell, which comprises a binding domain (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as HC) that binds to the neuronal cell and a translocation domain (amino terminal half of HC, designated as HN), that translocates the therapeutic agent into the neuronal cell, where the translocation domain is not a HN domain of a clostridial neurotoxin and is not a fragment or derivative of a HN domain of a clostridial toxin. Polypeptides of the invention are useful for the treatment of a disease state associated with neuronal cells. The polypeptide constructs are useful for delivering therapeutic substances to neuronal cells. They are useful to treat disorders of the CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours

CC and infection. They are also useful in gene therapy. The present sequence is modified clostridial heavy chain fragment. This sequence is constructed by fusing the binding domain of tetanus neurotoxin (TeNT) with translocation domain of diphtheria neurotoxin. (Updated on 11-SEP-2003 to standardise OS field)

XX SQ Sequence 665 AA;

Query Match 100.0%; Score 112; DB 4; Length 665;

Best Local Similarity 100.0%; Pred. No. 4e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21

Db 295 FNNFTVSFWLRVPKVSASHLE 315

RESULT 170

AAE35689

ID AAE35689 standard; protein; 665 AA.

XX AC AAE35689;

XX DT 23-OCT-2003 (revised)

DT 17-JUN-2003 (first entry)

XX DE DiPT HN domain-TeNT-Hc fusion construct.

XX KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;

XX infection; Prion disease; Alzheimer' disease; hypersecretion disorder;

XX muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;

XX torticollis; blephorospasm; asthma; fusion protein; tetanus neurotoxin;

XX diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;

XX binding domain.

XX OS Corynebacterium diphtheriae.

OS Clostridium tetani.

OS Chimeric.

XX PN W0200296467-A2.

XX PD 05-DEC-2002.

XX PF 21-MAY-2002; 2002WO-GB002384.

XX PR 24-MAY-2001; 2001GB-00012687.

XX PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX PI Sutton JM, Shone CC;

XX DR WPI; 2003-167247/16.

XX Conjugate for modulating cell survival and cell growth, modulating release of inflammatory mediator from cells, comprises injected bacterial effector protein and a carrier that targets the protein to target cell.
PS Example 12; Page 49-52; 130pp; English.
XX The invention relates to a conjugate comprising an injected bacterial effector protein and a carrier that targets the effector protein to a target cell. Pharmaceutical composition of the invention is useful for a treatment selected from promoting or inhibiting survival of cells; preventing and reversing damage to cells; killing cells; promoting or inhibiting the growth of cells, apoptosis, release of an inflammatory mediator from cells, division of cells and treating intracellular infection and regulating nitric oxide release from cells. The invention is useful in the manufacture of a medicament for treating a neuronal cell, for intracellular infection, for interfering with intracellular trafficking, for modulating expression of cell-surface markers and for inhibiting secretion from cells. The invention is also useful for treating Prion disease, Alzheimer' disease and wide range of disorders including muscle spasms such as blephorospasm, torticollis and

CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising *Corynebacterium diphtheriae* diphtheria toxin translocation
 CC domain (Dip-HN domain) and *Clostridium tetani* tetanus neurotoxin binding
 CC domain (TeNT-Hc). This sequence is used in the exemplification of the
 CC invention. (Updated on 23-OCT-2003 to standardise OS field)
 XX
 XX

SQ Sequence 665 AA;

Query Match 100.0%; Score 112; DB 6; Length 665;
 Best Local Similarity 100.0%; Pred. No. 4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 295 FNNFTVSFWLRVVKVSASHLE 315

RESULT 171

AAE35690
 ID AAE35690 standard; protein; 677 AA.

XX
 AC AAE35690;

DT 17-JUN-2003 (first entry)

DE TeNT-Hc-DipT HN domain-thrombin linker fusion construct.

XX Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DipT; Hc;
 KW binding domain.

XX *Corynebacterium diphtheriae*.

OS *Clostridium tetani*.

OS Unidentified.

OS Chimeric.

XX WO200296467-A2.

XX
 PD 05-DEC-2002.

XX 21-MAY-2002; 2002WO-GB002384.

XX 24-MAY-2001; 2001GB-00012687.

XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX Sutton JM, Shone CC;

XX WPI; 2003-167247/16.

XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.

XX Example 12; Page 52-54; 130pp; English.

XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders

CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising *Corynebacterium diphtheriae* diphtheria toxin translocation
 CC domain (Dip-HN domain) and *Clostridium tetani* tetanus neurotoxin binding
 CC domain (TeNT-Hc) and thrombin linker peptide. This sequence is used in
 CC the exemplification of the invention
 XX
 XX

SQ Sequence 677 AA;

Query Match 100.0%; Score 112; DB 6; Length 677;
 Best Local Similarity 100.0%; Pred. No. 4.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVVKVSASHLE 21
 |||||
 Db 307 FNNFTVSFWLRVVKVSASHLE 327

RESULT 172

AAE35691

ID AAE35691 standard; protein; 677 AA.

XX
 AC AAE35691;

DT 17-JUN-2003 (first entry)

DE TeNT-Hc-DipT HN domain-factor Xa linker fusion construct.

XX Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DipT; Hc;
 KW binding domain.

XX *Corynebacterium diphtheriae*.

OS *Clostridium tetani*.

OS Unidentified.

OS Chimeric.

XX WO200296467-A2.

XX
 PD 05-DEC-2002.

XX 21-MAY-2002; 2002WO-GB002384.

XX 24-MAY-2001; 2001GB-00012687.

XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.

XX Sutton JM, Shone CC;

XX WPI; 2003-167247/16.

XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.

XX Example 12; Page 55-57; 130pp; English.

XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC inhibiting secretion from cells. The invention is also useful for

CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (D1PT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc) and factor Xa linker peptide. This sequence is used in
 CC the exemplification of the invention
 XX
 XX

SQ Sequence 677 AA;

Query Match 100.0%; Score 112; DB 6; Length 677;
 Best Local Similarity 100.0%; Pred. No. 4.1e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 307 FNNFTVSFWLRVPKVSASHLE 327

RESULT 173

RAY92647

ID AAY92647 standard; protein; 693 AA.

AC AAY92647;

XX

XX 10-AUG-2000 (first entry)

XX Mutant human PSM antigen splice variant construct, hPSM'6.3.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX

OS Homo sapiens.

OS Synthetic.

XX Key

XX Location/Qualifiers

XX 153..173

XX Peptide

XX /label= P30

XX /note= "foreign epitope"

XX Peptide

XX 391..405

XX /label= P2

XX /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

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CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

SQ Sequence 693 AA;

Query Match 100.0%; Score 112; DB 3; Length 693;

Best Local Similarity 100.0%; Pred. No. 4.2e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

|||||

DB 153 FNNFTVSFWLRVPKVSASHLE 173

RESULT 174

AAY92648

ID AAY92648 standard; protein; 693 AA.

AC AAY92648;

XX

XX 10-AUG-2000 (first entry)

XX Mutant human PSM antigen splice variant construct, hPSM'8.3.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer; PSM;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX

OS Homo sapiens.

OS Synthetic.

XX Key

XX Location/Qualifiers

XX 153..173

XX Peptide

XX /label= P30

XX /note= "foreign epitope"

XX Peptide

XX 549..563

XX /label= P2

XX /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

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CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide

Inducing immune responses to weakly immunogenic, tumor associated peptide
 antigens for the treatment of breast and prostate cancer.

Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide

CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 693 AA;

Query Match 100.0%; Score 112; DB 3; Length 693;
 Best Local Similarity 100.0%; Pred. No. 4.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 153 FNNFTVSFWLRVPKVSASHLE 173

RESULT 175

AA92661
 ID AAY92661 standard; protein; 698 AA.

AC AAY92661;

DT 10-AUG-2000 (first entry)

DE Mutant murine PSM splice variant construct, mPSM'X.

KW Prostate specific membrane antigen; splice variant; mutant; vaccination;
 KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
 KW cell-associated peptide antigen; foreign epitope.

OS Mus musculus.

OS Synthetic.

FH Key Location/Qualifiers
 FT Peptide 197..217
 FT /label= P30

PN WO200020027-A2.

PD 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

PA Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.
 XX
 CC AAY92659-62 are mutant immunogenized murine prostate specific membrane
 CC antigen (PSM) constructs, which contain a foreign epitope, P30. The
 CC analogues can be used to study whether autotolerance to mouse PSM can be
 CC broken in mice by immunisation and/or DNA vaccination against murine PSM
 CC using murine PSM analogues. Immunogenic analogues of PSM can be used in
 CC the claimed method as an autovaccine to induce a CTL response. The method
 CC is used for inducing immune responses against weakly immunogenic cell-
 CC associated peptide antigens (PA) such as those associated with cancers
 CC (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
 CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
 CC presentation by antigen producing cells (APCs) of the animals immune
 CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
 CC the PA and/or at least 1 B-cell group derived from the cell-associated PA
 CC ; and (2) at least 1 first T helper cell group which is foreign to the
 CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
 CC comprising a substantial part of all known and predicted CTL and B-cell
 CC epitopes of the respective PA and including at least one foreign T helper
 CC epitope are also claimed. The method is used to treat prostate,
 CC prostate/breast or breast cancer when the PA is human PSM, FGF8b and
 CC Her2, respectively. Note: This sequence was constructed from the murine
 CC PSM splice variant (AAY92624), which appears on pages 210-213 of the
 CC specification

XX SQ Sequence 698 AA;

Query Match 100.0%; Score 112; DB 3; Length 698;
 Best Local Similarity 100.0%; Pred. No. 4.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 197 FNNFTVSFWLRVPKVSASHLE 217

RESULT 176

AA92662

ID AAY92662 standard; protein; 703 AA.

AC AAY92662;

DT 10-AUG-2000 (first entry)

DE Mutant murine PSM splice variant construct, mPSM'Y.

XX Prostate specific membrane antigen; splice variant; mutant; vaccination;
 KW cytotoxic T-lymphocyte immunity; breast cancer; prostate cancer;
 KW cell-associated peptide antigen; foreign epitope.

OS Mus musculus.

OS Synthetic.

FH Key Location/Qualifiers
 FT Peptide 631..651
 FT /label= P30

PN WO200020027-A2.

PD 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

PA Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
PT antigens for the treatment of breast and prostate cancer.
XX

PS Example 1; Page; 220pp; English.

XX AAY92659-62 are mutant immunogenized murine prostate specific membrane
CC antigen (PSM) constructs, which contain a foreign epitope, P30. The
CC analogues can be used to study whether autotolerance to mouse PSM can be
CC broken in mice by immunisation and/or DNA vaccination against murine PSM
CC using murine PSM analogues. Immunogenic analogues of PSM can be used in
CC the claimed method as an autovaccine to induce a CTL response. The method
CC is used for inducing immune responses against weakly immunogenic cell-
CC associated peptide antigens (PA) such as those associated with cancers
CC (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
CC growth factor 8b (FGF8b). The method comprises effecting simultaneous
CC presentation by antigen producing cells (APCs) of the animals immune
CC system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
CC the PA and/or at least 1 B-cell group derived from the cell-associated PA
CC ; and (2) at least 1 first T helper cell group which is foreign to the
CC animal. Analogues of human PSM, human Her2 and human/murine FGF8b
CC comprising a substantial part of all known and predicted CTL and B-cell
CC epitopes of the respective PA and including at least one foreign T helper
CC epitope are also claimed. The method is used to treat prostate,
CC prostate/breast or breast cancer when the PA is human PSM, FGF8b and
CC Her2, respectively. Note: This sequence was constructed from the murine
CC PSM splice variant (AAY92624), which appears on pages 210-213 of the
CC specification
XX

SQ Sequence 703 AA;

Query Match 100.0%; Score 112; DB 3; Length 703;
Best Local Similarity 100.0%; Pred. No. 4.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 631 FNNFTVSFWLRVPKVSASHLE 651
|||||

RESULT 177

ABR82479
ID ABR82479 standard; protein; 708 AA.

AC ABR82479;

DT 20-NOV-2003 (first entry)

DE Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
KW APC; cytostatic; vaccine; human; tetanus toxoid; P2; P30; antigen.
XX

OS Synthetic.

XX Key Location/Qualifiers
FH Peptide 1..34
FT /note= "signal peptide"
FT Protein 35..708
FT /note= "mature protein"

XX WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK000031.

XX 17-JAN-2002; 2002DK-00000082.

XX 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysner S, Voldborg B;

PT Inducing an immune response in humans against autologous carcinoembryonic antigen (CEA) comprises administering a modified CEA polypeptide, a

XX WPI; 2003-587260/55.
DR N-PSDB; ACF35966.

XX Inducing an immune response in humans against autologous carcinoembryonic
PT antigen (CEA) comprises administering a modified CEA polypeptide, a
PT nucleic acid encoding the polypeptide, or a microorganism expressing the
PT polypeptide.

XX Disclosure; Page 121-124; 140pp; English.

XX The invention relates to inducing an immune response against autologous
CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
CC involves effecting uptake and processing by antigen presenting cells
CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
CC or virus expressing the modified CEA polypeptide to induce a CTL response
CC and an antibody response that targets the autologous CEA. The method is
CC useful in immunizing actively against diseases characterized by cells
CC that express CEA. The present sequence represents a modified human CEA
CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
CC in its sequence
XX

SQ Sequence 708 AA;

Query Match 100.0%; Score 112; DB 7; Length 708;
Best Local Similarity 100.0%; Pred. No. 4.3e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
Db 642 FNNFTVSFWLRVPKVSASHLE 662
|||||

RESULT 178

ABR82480

ID ABR82480 standard; protein; 713 AA.

XX ABR82480;

XX 20-NOV-2003 (first entry)

XX Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
KW APC; cytostatic; vaccine; human; tetanus toxoid; P2; P30; antigen.

XX Synthetic.

XX Key Location/Qualifiers
FH Peptide 1..34
FT /note= "signal peptide"
FT Protein 35..713
FT /note= "mature protein"

XX WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK000031.

XX 17-JAN-2002; 2002DK-00000082.

XX 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysner S, Voldborg B;

XX WPI; 2003-587260/55.

XX N-PSDB; ACF35967.

XX Inducing an immune response in humans against autologous carcinoembryonic antigen (CEA) comprises administering a modified CEA polypeptide, a

PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.

PS Disclosure; Page 128-131; 140pp; English.

XX The invention relates to inducing an immune response against autologous
 CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence

XX SQ Sequence 713 AA;

Query Match 100.0%; Score 112; DB 7; Length 713;
 Best Local Similarity 100.0%; Pred. No. 4.3e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21
 Db 513 FNNFTVSFVLRVVKVSASHLE 533

RESULT 179

ABR82478
 ID ABR82478 standard; protein; 717 AA.

XX AC

XX AC

DT 20-NOV-2003 (first entry)

XX Modified human CEA-TT P2 and P30 epitopes.

XX CEA; immune response; carcinoembryonic antigen; antigen presenting cell;
 KW APC; cytostatic; vaccine; human; tetanus toxoid; p2; p30; antigen.

XX Synthetic.

XX Key Location/Qualifiers
 FH Peptide 1..34
 FT /note= "signal peptide"
 FT Protein 35..717
 FT /note= "mature protein"

XX WO2003059379-A2.

XX 24-JUL-2003.

XX 17-JAN-2003; 2003WO-DK000031.

XX 17-JAN-2002; 2002DK-00000082.

XX 17-JAN-2002; 2002US-0350047P.

XX (PHAR-) PHARMEXA AS.

XX Klysner S, Voldborg B;

XX WPI; 2003-587260/55.

XX N-PSDB; ACF35964.

XX Inducing an immune response in humans against autologous carcinoembryonic
 PT antigen (CEA) comprises administering a modified CEA polypeptide, a
 PT nucleic acid encoding the polypeptide, or a microorganism expressing the
 PT polypeptide.

PS Disclosure; Page 114-117; 140pp; English.

XX The invention relates to inducing an immune response against autologous

CC carcinoembryonic antigen (CEA) in an animal, e.g. human. The method
 CC involves effecting uptake and processing by antigen presenting cells
 CC (APCs) in the animal of at least 1 modified CEA polypeptide or of a
 CC nucleic acid encoding the modified CEA polypeptide or of a microorganism
 CC or virus expressing the modified CEA polypeptide to induce a CTL response
 CC and an antibody response that targets the autologous CEA. The method is
 CC useful in immunizing actively against diseases characterized by cells
 CC that express CEA. The present sequence represents a modified human CEA
 CC polypeptide that has tetanus toxoid (TT) P2 and P30 epitopes introduced
 CC in its sequence

XX SQ Sequence 717 AA;

Query Match 100.0%; Score 112; DB 7; Length 717;
 Best Local Similarity 100.0%; Pred. No. 4.4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFVLRVVKVSASHLE 21
 Db 693 FNNFTVSFVLRVVKVSASHLE 713

RESULT 180

AAV92637
 ID AAV92637 standard; protein; 750 AA.

XX AC

XX AAV92637;

DT 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM2.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.

XX Synthetic.

XX Key Location/Qualifiers
 FH Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 91..105
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX AAV92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are

CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

XX Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 181

AAAY92639
 ID AAY92639 standard; protein; 750 AA.

AC AAY92639;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM5.1.
 DE Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.
 OS Synthetic.

Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 305..319
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

PS Example 1; Page; 220pp; English.

XX AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX

XX Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 182

AAAY92628
 ID AAY92628 standard; protein; 750 AA.

AC AAY92628;

XX 10-AUG-2000 (first entry)

XX Mutant human prostate specific membrane antigen construct, hPSM6.1.

XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX Homo sapiens.
 OS Synthetic.

Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 448..462
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;
 DR WPI; 2000-349917/30.
 XX
 PT Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 PS Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 21 FNNFTVSFWLRVPKVSASHLE 41
 RESULT 183
 AAY92631
 ID AAY92631 standard; protein; 750 AA.
 AC AAY92631;
 DT 10-AUG-2000 (first entry)
 DE Mutant human prostate specific membrane antigen construct, hPSM1.6.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 443..463
 FT /label= P30
 FT /note= "foreign epitope"
 XX
 PN WO2000020027-A2.
 XX
 PD 13-APR-2000.
 XX
 PF 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.
 PR 20-OCT-1998; 98US-0105011P.
 XX
 PA (MEBI-) M & E BIOTECH AS.
 XX
 PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX
 XX WPI; 2000-349917/30.
 DR
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 PT
 XX Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;
 Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 443 FNNFTVSFWLRVPKVSASHLE 463
 RESULT 184
 AAY92645
 ID AAY92645 standard; protein; 750 AA.
 AC AAY92645;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM8.3.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 210..230
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 606..620
 FT /label= P2

```

XX FH Key Peptide Location/Qualifiers
XX FT 17..31
XX FT /label= P2
XX FT /note= "foreign epitope"
XX PD 13-APR-2000.
XX PF 05-OCT-1999; 99WO-DK000525.
XX PR 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX PI Gautam A, Birk P, Karlsson G;
XX PI WPI; 2000-349917/30.
XX PS Inducing immune responses to weakly immunogenic, tumor associated peptide
XX PS antigens for the treatment of breast and prostate cancer.
XX PS Example 1; Page; 220pp; English.
XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
XX CC The immunogenic analogues of PSM can be used in the claimed method as an
XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
XX CC binding regions and cysteine residues involved in disulfide bonds are
XX CC preserved in the immunogenized forms. The method is used for inducing
XX CC immune responses against weakly immunogenic cell-associated peptide
XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX CC simultaneous presentation by antigen producing cells (APCs) of the
XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX CC group derived from the PA and/or at least 1 B-cell group derived from the
XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is
XX CC foreign to the animal. Analogues of human PSM, human Her2 and
XX CC human/murine FGF8b comprising a substantial part of all known and
XX CC predicted CTL and B-cell epitopes of the respective PA and including at
XX CC least one foreign T helper epitope are also claimed. The method is used
XX CC to treat prostate, prostate/breast or breast cancer when the PA is human
XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187
XX CC of the specification
XX SQ Sequence 750 AA;
XX Query Match 100.0%; Score 112; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 4.6e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 210 FNNFTVSFWLRVPKVSASHLE 230
XX RESULT 185
XX AAY92627
XX ID AAY92627 standard; protein; 750 AA.
XX AC AAY92627;
XX XX 10-AUG-2000 (first entry)
XX XX Mutant human prostate specific membrane antigen construct, hPSM1.1.
XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
XX KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX KW prostate cancer; cell-associated peptide antigen; foreign epitope.
XX OS Homo sapiens.
XX OS Synthetic.

```

```

XX FH Key Peptide Location/Qualifiers
XX FT 17..31
XX FT /label= P2
XX FT /note= "foreign epitope"
XX PD 13-APR-2000.
XX PF 05-OCT-1999; 99WO-DK000525.
XX PR 05-OCT-1998; 98DK-00001261.
XX PR 20-OCT-1998; 98US-0105011P.
XX PA (MEBI-) M & E BIOTECH AS.
XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
XX PI Gautam A, Birk P, Karlsson G;
XX PI WPI; 2000-349917/30.
XX PS Inducing immune responses to weakly immunogenic, tumor associated peptide
XX PS antigens for the treatment of breast and prostate cancer.
XX PS Example 1; Page; 220pp; English.
XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
XX CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
XX CC The immunogenic analogues of PSM can be used in the claimed method as an
XX CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
XX CC binding regions and cysteine residues involved in disulfide bonds are
XX CC preserved in the immunogenized forms. The method is used for inducing
XX CC immune responses against weakly immunogenic cell-associated peptide
XX CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
XX CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
XX CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
XX CC simultaneous presentation by antigen producing cells (APCs) of the
XX CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
XX CC group derived from the PA and/or at least 1 B-cell group derived from the
XX CC cell-associated PA; and (2) at least 1 first T helper cell group which is
XX CC foreign to the animal. Analogues of human PSM, human Her2 and
XX CC human/murine FGF8b comprising a substantial part of all known and
XX CC predicted CTL and B-cell epitopes of the respective PA and including at
XX CC least one foreign T helper epitope are also claimed. The method is used
XX CC to treat prostate, prostate/breast or breast cancer when the PA is human
XX CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
XX CC from the wild type human PSM (AAY92619), which appears on pages 184-187
XX CC of the specification
XX SQ Sequence 750 AA;
XX Query Match 100.0%; Score 112; DB 3; Length 750;
XX Best Local Similarity 100.0%; Pred. No. 4.6e-10;
XX Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
XX QY 1 FNNFTVSFWLRVPKVSASHLE 21
XX Db 32 FNNFTVSFWLRVPKVSASHLE 52
XX RESULT 186
XX AAY92632
XX ID AAY92632 standard; protein; 750 AA.
XX AC AAY92632;
XX XX 10-AUG-2000 (first entry)
XX XX Mutant human prostate specific membrane antigen construct, hPSM1.8.

```


XX Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT 607..627
 FT /label= P30
 FT /note= "foreign epitope"
 XX
 PN WO200020027-A2.
 XX
 XX 13-APR-2000.
 PD
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 PF
 XX 05-OCT-1998; 98DK-00001261.
 PR
 XX 20-OCT-1998; 98US-0105011P.
 PR
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 PI
 XX WPI; 2000-349917/30.
 DR
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 XX Sequence 750 AA;
 SQ
 Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 607 FNNFTVSFWLRVPKVSASHLE 627
 RESULT 187
 AAY92638

ID AAY92638 standard; protein; 750 AA.
 XX
 AC AAY92638;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM3.1.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.
 XX
 FH Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT 213..227
 FT /label= P2
 FT /note= "foreign epitope"
 XX
 PN WO200020027-A2.
 XX
 XX 13-APR-2000.
 PD
 XX
 XX 05-OCT-1999; 99WO-DK000525.
 PF
 XX 05-OCT-1998; 98DK-00001261.
 PR
 XX 20-OCT-1998; 98US-0105011P.
 PR
 XX (MEBI-) M & E BIOTECH AS.
 PA
 XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 PI
 XX WPI; 2000-349917/30.
 DR
 XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX
 XX Example 1; Page; 220pp; English.
 XX
 CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification
 XX
 XX Sequence 750 AA;
 SQ
 Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVFWLRVFKVSASHLE 21
 Db 21 FNNFTVFWLRVFKVSASHLE 41

RESULT 188

AA92630
 ID AAY92630 standard; protein; 750 AA.

XX AC AAY92630;
 XX 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM10.1.
 XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.
 OS Synthetic.

XX FH Key Location/Qualifiers
 FT Peptide .21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 674..688
 FT /label= P2
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

XX PR 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;
 XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AAY92619), which appears on pages 184-187
 CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVFWLRVFKVSASHLE 21
 Db 21 FNNFTVFWLRVFKVSASHLE 41

RESULT 189

AA92633

ID AAY92633 standard; protein; 750 AA.

XX AC AAY92633;

XX 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM1.10.
 XX KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

OS Synthetic.

XX FH Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 673..693
 FT /label= P30
 FT /note= "foreign epitope"

XX WO200020027-A2.

XX 13-APR-2000.

XX PF 05-OCT-1999; 99WO-DK000525.

XX PR 05-OCT-1998; 98DK-00001261.

XX PR 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.

XX Example 1; Page; 220pp; English.

XX CC AAY92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and

CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 673 FNNFTVSFWLRVPKVSASHLE 693
 |||||

RESULT 190
 AA92646
 ID AA92646 standard; protein; 750 AA.
 XX
 AC AA92646;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM10.3.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.

Key Location/Qualifiers
 FT Peptide 210..230
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 674..688
 FT /label= P2
 FT /note= "foreign epitope"

WO200020027-A2.
 13-APR-2000.
 05-OCT-1999; 99WO-DK000525.
 05-OCT-1998; 98DK-00001261.
 20-OCT-1998; 98US-0105011P.
 (MEBI-) M & E BIOTECH AS.
 Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 Gautam A, Birk P, Karlsson G;
 WPI; 2000-349917/30.
 Inducing immune responses to weakly immunogenic, tumor associated peptide
 antigens for the treatment of breast and prostate cancer.
 Example 1; Page; 220pp; English.

AA92627-49 are mutant immunogenized human prostate specific membrane
 antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 The immunogenic analogues of PSM can be used in the claimed method as an
 autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 binding regions and cysteine residues involved in disulfide bonds are
 preserved in the immunogenized forms. The method is used for inducing
 immune responses against weakly immunogenic cell-associated peptide
 antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 210 FNNFTVSFWLRVPKVSASHLE 230
 |||||

RESULT 191
 AA92634
 ID AA92634 standard; protein; 750 AA.
 XX
 AC AA92634;
 XX
 DT 10-AUG-2000 (first entry)
 XX
 DE Mutant human prostate specific membrane antigen construct, hPSM1.2.
 XX
 KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.
 XX
 OS Homo sapiens.
 OS Synthetic.

Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 87..107
 FT /label= P30
 FT /note= "foreign epitope"

WO200020027-A2.
 13-APR-2000.
 05-OCT-1999; 99WO-DK000525.
 05-OCT-1998; 98DK-00001261.
 20-OCT-1998; 98US-0105011P.
 (MEBI-) M & E BIOTECH AS.
 Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 Gautam A, Birk P, Karlsson G;
 WPI; 2000-349917/30.
 Inducing immune responses to weakly immunogenic, tumor associated peptide
 antigens for the treatment of breast and prostate cancer.
 Example 1; Page; 220pp; English.

AA92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX
 SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 87 FNNFTVSFWLRVPKVSASHLE 107

RESULT 192

AA92629
 ID AA92629 standard; protein; 750 AA.

AC AA92629;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM8.1.

KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.

OS Synthetic.

Key Location/Qualifiers
 FT Peptide 21..41
 FT /label= P30
 FT /note= "foreign epitope"
 FT Peptide 606..620
 FT /label= P2
 FT /note= "foreign epitope"

PN WO200020027-A2.

PD 13-APR-2000.

PF 05-OCT-1999; 99WO-DK000525.

PR 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

PA (MEBI-) M & E BIOTECH AS.

XX Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

PI Gautam A, Birk P, Karlsson G;

XX WPI; 2000-349917/30.

XX Inducing immune responses to weakly immunogenic, tumor associated peptide
 PT antigens for the treatment of breast and prostate cancer.
 XX

PS Example 1; Page; 220pp; English.

XX
 CC AA92627-49 are mutant immunogenized human prostate specific membrane
 CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
 CC The immunogenic analogues of PSM can be used in the claimed method as an
 CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
 CC binding regions and cysteine residues involved in disulfide bonds are
 CC preserved in the immunogenized forms. The method is used for inducing
 CC immune responses against weakly immunogenic cell-associated peptide
 CC antigens (PA) such as those associated with cancers (self-proteins), e.g.
 CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
 CC fibroblast growth factor 8b (FGF8b). The method comprises effecting
 CC simultaneous presentation by antigen producing cells (APCs) of the
 CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
 CC group derived from the PA and/or at least 1 B-cell group derived from the
 CC cell-associated PA; and (2) at least 1 first T helper cell group which is
 CC foreign to the animal. Analogues of human PSM, human Her2 and
 CC human/murine FGF8b comprising a substantial part of all known and
 CC predicted CTL and B-cell epitopes of the respective PA and including at
 CC least one foreign T helper epitope are also claimed. The method is used
 CC to treat prostate, prostate/breast or breast cancer when the PA is human
 CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
 CC from the wild type human PSM (AA92619), which appears on pages 184-187
 CC of the specification
 XX

SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;
 Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21

DB 21 FNNFTVSFWLRVPKVSASHLE 41

RESULT 193

AA92636

ID AA92636 standard; protein; 750 AA.

AC AA92636;

DT 10-AUG-2000 (first entry)

DE Mutant human prostate specific membrane antigen construct, hPSM1.5.

KW Prostate specific membrane antigen; immunogenized construct; mutant;
 KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
 KW prostate cancer; cell-associated peptide antigen; foreign epitope.

OS Homo sapiens.

OS Synthetic.

Key Location/Qualifiers
 FT Peptide 24..38
 FT /label= P2
 FT /note= "foreign epitope"
 FT Peptide 301..321
 FT /label= P30
 FT /note= "foreign epitope"

PN WO200020027-A2.

PD 13-APR-2000.

PF 05-OCT-1999; 99WO-DK000525.

PR 05-OCT-1998; 98DK-00001261.

XX 20-OCT-1998; 98US-0105011P.

XX PA (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX PI Gautam A, Birk P, Karlsson G;

XX XX WPI; 2000-349917/30.

XX DR Inducing immune responses to weakly immunogenic, tumor associated peptide

XX PT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX XX AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

CC The immunogenic analogues of PSM can be used in the claimed method as an

CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are

CC preserved in the immunogenized forms. The method is used for inducing

CC immune responses against weakly immunogenic cell-associated peptide

CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

CC group derived from the PA and/or at least 1 B-cell group derived from the

CC cell-associated PA; and (2) at least 1 first T helper cell group which is

CC foreign to the animal. Analogues of human PSM, human Her2 and

CC human/murine FGF8b comprising a substantial part of all known and

CC predicted CTL and B-cell epitopes of the respective PA and including at

CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human

CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

CC from the wild type human PSM (AAY92619), which appears on pages 184-187

CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRPKVSASHLE 21

Db 301 FNNFTVSFWLRPKVSASHLE 321

RESULT 194

AAY92642

ID AAY92642 standard; protein; 750 AA.

XX AC AAY92642;

XX DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM0.1.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide 21..41

FT /label= P30

FT /note= "foreign epitope"

XX PN W0200020027-A2.

XX PD 13-APR-2000.

XX XX

PF 05-OCT-1999; 99WO-DK000525.

XX 05-OCT-1998; 98DK-00001261.

PR 20-OCT-1998; 98US-0105011P.

XX (MEBI-) M & E BIOTECH AS.

XX PI Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;

XX PI Gautam A, Birk P, Karlsson G;

XX XX WPI; 2000-349917/30.

XX DR Inducing immune responses to weakly immunogenic, tumor associated peptide

XX PT antigens for the treatment of breast and prostate cancer.

XX PS Example 1; Page; 220pp; English.

XX XX AAY92627-49 are mutant immunogenized human prostate specific membrane

CC antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).

CC The immunogenic analogues of PSM can be used in the claimed method as an

CC autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody

CC binding regions and cysteine residues involved in disulfide bonds are

CC preserved in the immunogenized forms. The method is used for inducing

CC immune responses against weakly immunogenic cell-associated peptide

CC antigens (PA) such as those associated with cancers (self-proteins), e.g.

CC human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or

CC fibroblast growth factor 8b (FGF8b). The method comprises effecting

CC simultaneous presentation by antigen producing cells (APCs) of the

CC animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)

CC group derived from the PA and/or at least 1 B-cell group derived from the

CC cell-associated PA; and (2) at least 1 first T helper cell group which is

CC foreign to the animal. Analogues of human PSM, human Her2 and

CC human/murine FGF8b comprising a substantial part of all known and

CC predicted CTL and B-cell epitopes of the respective PA and including at

CC least one foreign T helper epitope are also claimed. The method is used

CC to treat prostate, prostate/breast or breast cancer when the PA is human

CC PSM, FGF8b and Her2, respectively. Note: This sequence was constructed

CC from the wild type human PSM (AAY92619), which appears on pages 184-187

CC of the specification

XX SQ Sequence 750 AA;

Query Match 100.0%; Score 112; DB 3; Length 750;

Best Local Similarity 100.0%; Pred. No. 4.6e-10;

Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRPKVSASHLE 21

Db 21 FNNFTVSFWLRPKVSASHLE 41

RESULT 195

AAY92644

ID AAY92644 standard; protein; 750 AA.

XX AC AAY92644;

XX DT 10-AUG-2000 (first entry)

XX DE Mutant human prostate specific membrane antigen construct, hPSM6.3.

XX KW Prostate specific membrane antigen; immunogenized construct; mutant;

KW vaccination; cytotoxic T-lymphocyte immunity; breast cancer;

KW prostate cancer; cell-associated peptide antigen; foreign epitope.

XX OS Homo sapiens.

OS Synthetic.

XX Key Location/Qualifiers

FT Peptide 210..230

FT /label= P30

FT /note= "foreign epitope"

FT Peptide 448..462

```

FT  /label= P2
FT  /note= "foreign epitope"
XX
PN  WO200020027-A2.
XX
XX  13-APR-2000.
XX
PF  05-OCT-1999; 99WO-DK000525.
XX
XX  05-OCT-1998; 98DK-00001261.
PR  20-OCT-1998; 98US-0105011P.
XX
XX  (MEBI-) M & E BIOTECH AS.
XX
XX  Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI  Gautam A, Birk P, Karlsson G;
XX
XX  WPI; 2000-349917/30.
XX
XX  Inducing immune responses to weakly immunogenic, tumor associated peptide
PT  antigens for the treatment of breast and prostate cancer.
XX
XX  Example 1; Page; 220pp; English.
XX
XX  AAY92627-49 are mutant immunogenized human prostate specific membrane
CC  antigen (PSM) constructs, which contain foreign epitopes (P2 and/or P30).
CC  The immunogenic analogues of PSM can be used in the claimed method as an
CC  autovaccine to induce a CTL response. Subdominant CTL epitopes, antibody
CC  binding regions and cysteine residues involved in disulfide bonds are
CC  preserved in the immunogenized forms. The method is used for inducing
CC  immune responses against weakly immunogenic cell-associated peptide
CC  antigens (PA) such as those associated with cancers (self-proteins), e.g.
CC  human prostate specific membrane antigen (PSM), heregulin 2 (Her2) and/or
CC  fibroblast growth factor 8b (FGF8b). The method comprises effecting
CC  simultaneous presentation by antigen producing cells (APCs) of the
CC  animals immune system of: (1) at least 1 CTL (cytotoxic T-lymphocyte)
CC  group derived from the PA and/or at least 1 B-cell group derived from the
CC  cell-associated PA; and (2) at least 1 first T helper cell group which is
CC  foreign to the animal. Analogues of human PSM, human Her2 and
CC  human/murine FGF8b comprising a substantial part of all known and
CC  predicted CTL and B-cell epitopes of the respective PA and including at
CC  least one foreign T helper epitope are also claimed. The method is used
CC  to treat prostate, prostate/breast or breast cancer when the PA is human
CC  PSM, FGF8b and Her2, respectively. Note: This sequence was constructed
CC  from the wild type human PSM (AAY92619), which appears on pages 184-187
CC  of the specification
XX
XX  Sequence 750 AA;
SQ
Query Match 100.0%; Score 112; DB 3; Length 750;
Best Local Similarity 100.0%; Pred. No. 4.6e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 260 FNNFTVSFWLRVPKVSASHLE 280

RESULT 196
AAY92659
ID AAY92659 standard; protein; 756 AA.
XX
XX  AAY92659;
AC
XX  10-AUG-2000 (first entry)
DT
XX  Mutant murine prostate specific membrane antigen construct, mPSMX.
DE
XX  Prostate specific membrane antigen; immunogenized construct; mutant;
KW  vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX  prostate cancer; cell-associated peptide antigen; foreign epitope.
XX
XX  Mus musculus.
OS

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OS  Synthetic.
XX
XX  Key Location/Qualifiers
FT  Peptide 255. 275
FT
XX  /label= P30
XX
XX  WO200020027-A2.
XX
XX  13-APR-2000.
XX
XX  05-OCT-1999; 99WO-DK000525.
XX
XX  05-OCT-1998; 98DK-00001261.
PR  20-OCT-1998; 98US-0105011P.
XX
XX  (MEBI-) M & E BIOTECH AS.
XX
XX  Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
PI  Gautam A, Birk P, Karlsson G;
XX
XX  WPI; 2000-349917/30.
XX
XX  Inducing immune responses to weakly immunogenic, tumor associated peptide
PT  antigens for the treatment of breast and prostate cancer.
XX
XX  Example 1; Page; 220pp; English.
XX
XX  AAY92659-62 are mutant immunogenized murine prostate specific membrane
CC  antigen (PSM) constructs, which contain a foreign epitope, P30. The
CC  analogues can be used to study whether autotolerance to mouse PSM can be
CC  broken in mice by immunisation and/or DNA vaccination against murine PSM
CC  using murine PSM analogues. Immunogenic analogues of PSM can be used in
CC  the claimed method as an autovaccine to induce a CTL response. The method
CC  is used for inducing immune responses against weakly immunogenic cell-
CC  associated peptide antigens (PA) such as those associated with cancers
CC  (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
CC  growth factor 8b (FGF8b). The method comprises effecting simultaneous
CC  presentation by antigen producing cells (APCs) of the animals immune
CC  system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
CC  the PA and/or at least 1 B-cell group derived from the cell-associated PA
CC  ; and (2) at least 1 first T helper cell group which is foreign to the
CC  animal. Analogues of human PSM, human Her2 and human/murine FGF8b
CC  comprising a substantial part of all known and predicted CTL and B-cell
CC  epitopes of the respective PA and including at least one foreign T helper
CC  epitope are also claimed. The method is used to treat prostate,
CC  prostate/breast or breast cancer when the PA is human PSM, FGF8b and
CC  Her2, respectively. Note: This sequence was constructed from the wild
CC  type murine PSM (AAY92623), which appears on pages 204-206 of the
CC  specification
XX
XX  Sequence 756 AA;
SQ
Query Match 100.0%; Score 112; DB 3; Length 756;
Best Local Similarity 100.0%; Pred. No. 4.6e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 FNNFTVSFWLRVPKVSASHLE 21
Db 255 FNNFTVSFWLRVPKVSASHLE 275

RESULT 197
AAY92660
ID AAY92660 standard; protein; 761 AA.
XX
XX  AAY92660;
AC
XX  10-AUG-2000 (first entry)
DT
XX  Mutant murine prostate specific membrane antigen construct, mPSMY.
DE
XX  Prostate specific membrane antigen; immunogenized construct; mutant;
KW  vaccination; cytotoxic T-lymphocyte immunity; breast cancer;
XX

```

prostate cancer; cell-associated peptide antigen; foreign epitope.
 Mus musculus.
 Synthetic.
 Key Location/Qualifiers
 Peptide 689..709
 /label= P30
 WO20020027-A2.
 13-APR-2000.
 05-OCT-1999; 99WO-DK000525.
 05-OCT-1998; 98DK-00001261.
 20-OCT-1998; 98US-0105011P.
 (MBBI-) M & E BIOTECH AS.
 Steinaa L, Mouritsen S, Nielsen KG, Haaning J, Leach D, Dalum I;
 Gautam A, Birk P, Karlsson G;
 WPI; 2000-349917/30.
 Inducing immune responses to weakly immunogenic, tumor associated peptide
 antigens for the treatment of breast and prostate cancer.

Example 1; Page; 220pp; English.

AAV92659-62 are mutant immunogenized murine prostate specific membrane
 antigen (PSM) constructs, which contain a foreign epitope, P30. The
 analogues can be used to study whether autotolerance to mouse PSM can be
 broken in mice by immunisation and/or DNA vaccination against murine PSM
 using murine PSM analogues. Immunogenic analogues of PSM can be used in
 the claimed method as an autovaccine to induce a CTL response. The method
 is used for inducing immune responses against weakly immunogenic cell-
 associated peptide antigens (PA) such as those associated with cancers
 (self-proteins), e.g. human PSM, heregulin 2 (Her2) and/or fibroblast
 growth factor 8b (FGF8b). The method comprises effecting simultaneous
 presentation by antigen producing cells (APCs) of the animals immune
 system of: (1) at least 1 CTL (cytotoxic T-lymphocyte) group derived from
 the PA and/or at least 1 B-cell group derived from the cell-associated PA
 ; and (2) at least 1 first T helper cell group which is foreign to the
 animal. Analogues of human PSM, human Her2 and human/murine FGF8b
 comprising a substantial part of all known and predicted CTL and B-cell
 epitopes of the respective PA and including at least one foreign T helper
 epitope are also claimed. The method is used to treat prostate,
 prostate/breast or breast cancer when the PA is human PSM, FGF8b and
 Her2, respectively. Note: This sequence was constructed from the wild
 type murine PSM (AAV92623), which appears on pages 204-206 of the
 specification

Sequence 761 AA;

Query Match 100.0%; Score 112; DB 3; Length 761;
 Best Local Similarity 100.0%; Pred. No. 4.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 689 FNNFTVSFWLRVPKVSASHLE 709

RESULT 198

AAE35714
 ID AAE35714 standard; protein; 810 AA.

AC AAE35714;

XX 17-JUN-2003 (first entry)

DE TeNT-Hc-DiPT HN domain-thrombin linker-SpIC protein fusion construct.

XX

Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;
 binding domain; SpIC protein.

Corynebacterium diphtheriae.

Clostridium tetani.

Salmonella typhimurium.

Unidentified.

Chimeric.

WO200296467-A2.

05-DEC-2002.

21-MAY-2002; 2002WO-GB002384.

24-MAY-2001; 2001GB-00012687.

(MICR-) MICROBIOLOGICAL RES AUTHORITY.

Sutton JM, Shone CC;

WPI; 2003-167247/16.

Conjugate for modulating cell survival and cell growth, modulating
 release of inflammatory mediator from cells, comprises injected bacterial
 effector protein and a carrier that targets the protein to target cell.

Example 12; Page 114-117; 130pp; English.

The invention relates to a conjugate comprising an injected bacterial
 effector protein and a carrier that targets the effector protein to a
 target cell. Pharmaceutical composition of the invention is useful for a
 treatment selected from promoting or inhibiting survival of cells;
 preventing and reversing damage to cells; killing cells; promoting or
 inhibiting the growth of cells; apoptosis, release of an inflammatory
 mediator from cells, division of cells and treating intracellular
 infection and regulating nitric oxide release from cells. The invention
 is useful in the manufacture of a medicament for treating a neuronal
 cell, for intracellular infection, for interfering with intracellular
 trafficking, for modulating expression of cell-surface markers and for
 inhibiting secretion from cells. The invention is also useful for
 treating Prion disease, Alzheimer' disease and wide range of disorders
 including muscle spasms such as blepharospasm, torticollis and
 hypersecretion disorders such as chronic obstructive pulmonary disease
 (COPD), bronchitis and asthma. The present sequence is a fusion construct
 comprising Corynebacterium diphtheriae diphtheria toxin translocation
 domain (DiPT-HN domain), Clostridium tetani tetanus neurotoxin binding
 domain (TeNT-Hc), thrombin linker peptide and Salmonella typhimurium SpIC
 protein. This sequence is used in the exemplification of the invention

Sequence 810 AA;

Query Match 100.0%; Score 112; DB 6; Length 810;
 Best Local Similarity 100.0%; Pred. No. 5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 440 FNNFTVSFWLRVPKVSASHLE 460

RESULT 199

AAE35715

ID AAE35715 standard; protein; 810 AA.

XX AAE35715;

DT 17-JUN-2003 (first entry)

XX TeNT-Hc-DiPT HN domain-factor Xa linker-SpIC protein fusion construct.
 XX
 KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;
 KW binding domain; SpIC protein.
 XX
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Salmonella typhimurium.
 OS Unidentified.
 OS Chimeric.
 XX
 PN WO200296467-A2.
 XX
 XX
 PD 05-DEC-2002.
 XX
 XX 21-MAY-2002; 2002WO-GB002384.
 XX
 XX 24-MAY-2001; 2001GB-00012687.
 XX
 XX (MTCR-) MICROBIOLOGICAL RES AUTHORITY.
 XX
 XX Sutton JM, Shone CC;
 PI
 XX WPI; 2003-167247/16.
 DR
 XX
 XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.
 PT
 PS Example 12; Page 117-120; 130pp; English.
 XX
 XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells, division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DiPT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc), factor Xa linker peptide and Salmonella typhimurium
 CC SpIC protein. This sequence is used in the exemplification of the
 CC invention
 XX
 SQ Sequence 810 AA;
 Query Match 100.0%; Score 112; DB 6; Length 810;
 Best Local Similarity 100.0%; Pred. No. 5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 440 FNNFTVSFWLRVPKVSASHLE 460
 |||||
 RESULT 200
 ADL90085
 ID ADL90085 standard; protein; 875 AA.
 XX

AC ADL90085;
 XX 17-JUN-2004 (first entry)
 XX Tetanus toxin protein, SEQ ID 25.
 DE
 DE Immune response; immunoglobulin; Ig; tetanus toxin.
 KW
 KW Unidentified.
 OS
 XX WO2004027049-A2.
 PN
 XX 01-APR-2004.
 PD
 XX 18-SEP-2003; 2003WO-US030188.
 XX
 XX 20-SEP-2002; 2002US-0412219P.
 PR
 PR 14-MAR-2003; 2003WO-US007995.
 XX
 XX (ASTR-) ASTRAL INC.
 PA
 XX Bot A, Wang L, Smith D, Phillips B;
 PI WPI; 2004-295415/27.
 XX
 XX Generating an immune response to an antigen, useful for generating
 PT desired T cell responses comprises administering an immunoglobulin having
 PT one peptide epitope of the antigen attached to the immunoglobulin.
 PT
 XX Disclosure; Fig 1J; 154pp; English.
 PS
 XX The present invention relates to a method for generating an immune
 CC response to an antigen in a patient. The method comprises administering
 CC to the patient an immunoglobulin (Ig) or its portion where the Ig has at
 CC least one peptide epitope of the antigen attached to the Ig or its
 CC portion and administering the immunoglobulin or its portion in
 CC conjunction with a RNA segment. The present sequence is an antigen
 CC sequence, used to illustrate the invention.
 XX
 SQ Sequence 875 AA;
 Query Match 100.0%; Score 112; DB 8; Length 875;
 Best Local Similarity 100.0%; Pred. No. 5.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 Db 507 FNNFTVSFWLRVPKVSASHLE 527
 |||||
 RESULT 201
 AAE07889
 ID AAE07889 standard; protein; 882 AA.
 XX
 XX AAE07889;
 AC
 XX 01-NOV-2001 (first entry)
 DT
 XX Modified clostridial heavy chain-superoxide dismutase conjugate #1.
 DE
 XX Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
 KW superoxide dismutase; SOD; diphtheria neurotoxin; tetanus neurotoxin;
 KW TeNT.
 XX
 XX Geobacillus stearothermophilus.
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX
 XX WO200158936-A2.
 PN
 XX

PD 16-AUG-2001.
 XX
 PF 04-DEC-2000; 2000WO-GB004644.
 XX
 PR 02-DEC-1999; 99GB-00028530.
 PR 07-APR-2000; 2000GB-00008658.
 XX
 PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 XX
 PI Shone CC, Sutton JM, Silman N;
 XX WPI; 2001-514643/56.
 DR
 XX
 PT New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.
 XX
 PS Example 9; Page 39; 50pp; English.
 XX
 CC The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is modified clostridial heavy chain-superoxide dismutase conjugate. This
 CC conjugate comprises bacterial Mn-superoxide dismutase (MnSOD), from
 CC Bacillus stearothermophilus, linker that can be cleaved by thrombin,
 CC translocation domain from diphtheria neurotoxin and a neuronal cell-
 CC specific binding domain from tetanus neurotoxin (TeNT)
 XX
 SQ Sequence 882 AA;
 Query Match 100.0%; Score 112; DB 4; Length 882;
 Best Local Similarity 100.0%; Pred. No. 5.5e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 512 FNNFTVSFWLRVPKVSASHLE 532
 |||||
 RESULT 202
 AAE07891
 ID AAE07891 standard; protein; 907 AA.
 XX
 AC AAE07891;
 XX
 DT 01-NOV-2001 (first entry)
 XX
 DE Modified clostridial heavy chain-superoxide dismutase conjugate #3.
 XX
 KW Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy; chimeric;
 KW superoxide dismutase; SOD; diphtheria neurotoxin; tetanus neurotoxin;
 KW human; TeNT.
 XX
 OS Homo sapiens.
 OS Geobacillus stearothermophilus.
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Synthetic.
 OS Chimeric.
 XX WO200158936-A2.
 FN
 XX

PD 16-AUG-2001.
 XX
 PF 04-DEC-2000; 2000WO-GB004644.
 XX
 PR 02-DEC-1999; 99GB-00028530.
 PR 07-APR-2000; 2000GB-00008658.
 XX
 PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 XX
 PI Shone CC, Sutton JM, Silman N;
 XX WPI; 2001-514643/56.
 DR
 XX
 PT New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.
 XX
 PS Example 9; Page 41; 50pp; English.
 XX
 CC The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is modified clostridial heavy chain-superoxide dismutase conjugate. This
 CC conjugate comprises a mitochondrial leader sequence from human Mn-
 CC superoxide dismutase (MnSOD), MnSOD from Bacillus stearothermophilus,
 CC linker that can be cleaved by factor Xa, translocation domain from
 CC diphtheria neurotoxin and a neuronal cell-specific binding domain from
 CC tetanus neurotoxin (TeNT)
 XX
 SQ Sequence 907 AA;
 Query Match 100.0%; Score 112; DB 4; Length 907;
 Best Local Similarity 100.0%; Pred. No. 5.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
 DB 537 FNNFTVSFWLRVPKVSASHLE 557
 |||||
 RESULT 203
 AAE35712
 ID AAE35712 standard; protein; 999 AA.
 XX
 AC AAE35712;
 XX
 DT 17-JUN-2003 (first entry)
 XX
 DE TeNT-Hc-DipT HN domain-factor Xa linker-YopT protein fusion construct.
 XX
 KW Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer's disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DipT; Hc;
 KW binding domain; targeted effector protein; YopT.
 XX
 OS Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Yersinia pestis.
 OS Unidentified.
 OS Chimeric.
 XX

PN WO200296467-A2.
 XX
 PD 05-DEC-2002.
 XX
 PF 21-MAY-2002; 2002WO-GB002384.
 XX
 XX 24-MAY-2001; 2001GB-00012687.
 PR
 XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 PA
 XX Sutton JM, Shone CC;
 PI
 XX WPI; 2003-167247/16.
 DR
 XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.
 XX
 XX Example 12; Page 106-110; 130pp; English.
 PS
 XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis, release of an inflammatory
 CC mediator from cells; division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer's disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DipT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc), factor Xa linker peptide and Yersinia pestis targeted
 CC effector protein YopT. This sequence is used in the exemplification of
 CC the invention
 XX
 SQ Sequence 999 AA;
 Query Match 100.0%; Score 112; DB 6; Length 999;
 Best Local Similarity 100.0%; Pred. No. 6.4e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db |||||
 629 FNNFTVSFWLRVPKVSASHLE 649
 RESULT 204
 AAE07903
 ID AAE07903 standard; protein; 1052 AA.
 XX
 AC AAE07903;
 XX
 DT 01-NOV-2001 (first entry)
 XX
 DE C. botulinum C2 translocation domain with TeNT binding domain #2.
 XX Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy;
 KW botulinum neurotoxin; tetanus neurotoxin; TeNT.
 XX
 OS Clostridium botulinum.
 OS Clostridium tetani.
 XX WO200158936-A2.
 PN
 XX 16-AUG-2001.
 PD

XX 04-DEC-2000; 2000WO-GB004644.
 PF
 XX 02-DEC-1999; 99GB-00028530.
 PR
 PR 07-APR-2000; 2000GB-00008658.
 XX
 XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 PA
 XX Shone CC, Sutton JM, Silman N;
 XX WPI; 2001-514643/56.
 DR
 XX New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.
 XX
 XX Example 2; Page 50; 50pp; English.
 PS
 XX The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is C. botulinum C2 enterotoxin translocation domain with tetanus
 CC neurotoxin (TeNT) binding domain used in the exemplification of the
 CC invention
 XX
 SQ Sequence 1052 AA;
 Query Match 100.0%; Score 112; DB 4; Length 1052;
 Best Local Similarity 100.0%; Pred. No. 6.8e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 Qy 1 FNNFTVSFWLRVPKVSASHLE 21
 Db |||||
 682 FNNFTVSFWLRVPKVSASHLE 702
 RESULT 205
 AAE07902
 ID AAE07902 standard; protein; 1112 AA.
 XX
 AC AAE07902;
 XX
 DT 01-NOV-2001 (first entry)
 XX
 DE C. botulinum C2 translocation domain with TeNT binding domain #1.
 XX Neuronal cell; binding domain; translocation domain; stroke; epilepsy;
 KW tumour; infection; neurodegenerative disease; gene therapy;
 KW botulinum neurotoxin; tetanus neurotoxin; TeNT.
 XX
 OS Clostridium botulinum.
 OS Clostridium tetani.
 XX WO200158936-A2.
 PN
 XX 16-AUG-2001.
 PD
 XX 04-DEC-2000; 2000WO-GB004644.
 PF
 XX 02-DEC-1999; 99GB-00028530.
 PR
 PR 07-APR-2000; 2000GB-00008658.
 XX
 XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 PA

XX PI Shone CC, Sutton JM, Silman N;
 XX DR WPI; 2001-514643/56.
 XX PT New non toxic polypeptide for delivery of a therapeutic agent for the
 PT treatment of a CNS disorder comprising a binding domain that translocates
 PT the therapeutic agent into the neuronal cells.
 XX PS
 XX PS Example 2; Page 49; 50pp; English.
 XX CC The invention relates to a non toxic polypeptide, for delivery of a
 CC therapeutic agent to a neuronal cell, which comprises a binding domain
 CC (carboxy terminal half of heavy chain (HC) of a neurotoxin, designated as
 CC Hc) that binds to the neuronal cell and a translocation domain (amino
 CC terminal half of HC, designated as HN), that translocates the therapeutic
 CC agent into the neuronal cell, where the translocation domain is not a HN
 CC domain of a clostridial neurotoxin and is not a fragment or derivative of
 CC a HN domain of a clostridial toxin. Polypeptides of the invention are
 CC useful for the treatment of a disease state associated with neuronal
 CC cells. The polypeptide constructs are useful for delivering therapeutic
 CC substances to neuronal cells. They are useful to treat disorders of the
 CC CNS including neurodegenerative diseases, stroke, epilepsy, brain tumours
 CC and infection. They are also useful in gene therapy. The present sequence
 CC is C. botulinum C2 enterotoxin translocation domain with tetanus
 CC neurotoxin (TeNT) binding domain used in the exemplification of the
 CC invention
 XX CC
 XX SQ Sequence 1112 AA;
 Query Match 100.0%; Score 112; DB 4; Length 1112;
 Best Local Similarity 100.0%; Pred. No. 7.2e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 742 FNNFTVSFWLRVPKVSASHLE 762
 RESULT 206
 AAE35709
 ID AAE35709 standard; protein; 1212 AA.
 AC AAE35709;
 XX 17-JUN-2003 (first entry)
 DT TeNT-Hc-DiPT HN domain-factor Xa linker-SigD protein fusion construct.
 DE Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;
 KW binding domain.
 XX Corynebacterium diphtheriae.
 OS Clostridium tetani
 OS Salmonella typhimurium.
 OS Unidentified.
 OS Chimeric.
 XX WO200296467-A2.
 XX 05-DEC-2002.
 XX 21-MAY-2002; 2002WO-GB002384.
 XX 24-MAY-2001; 2001GB-00012687.
 XX (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 XX Sutton JM, Shone CC;
 XX PI

XX WPI; 2003-167247/16.
 XX Conjugate for modulating cell survival and cell growth, modulating
 PT release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.
 XX PS
 XX PS Example 12; Page 92-96; 130pp; English.
 XX CC The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis; release of an inflammatory
 CC mediator from cells; division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer' disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DiPT-HN domain). Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc), factor Xa linker peptide and Salmonella typhimurium
 CC truncated invasion gene D protein, SigD. This sequence is used in the
 CC exemplification of the invention
 XX CC
 XX SQ Sequence 1212 AA;
 Query Match 100.0%; Score 112; DB 6; Length 1212;
 Best Local Similarity 100.0%; Pred. No. 8e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 Db 842 FNNFTVSFWLRVPKVSASHLE 862
 RESULT 207
 AAE35708
 ID AAE35708 standard; protein; 1212 AA.
 AC AAE35708;
 XX 17-JUN-2003 (first entry)
 DT TeNT-Hc-DiPT HN domain-thrombin linker-SigD protein fusion construct.
 DE Apoptosis; therapy; inflammatory mediator; intracellular trafficking;
 KW infection; Prion disease; Alzheimer' disease; hypersecretion disorder;
 KW muscle spasm; COPD; bronchitis; chronic obstructive pulmonary disease;
 KW torticollis; blepharospasm; asthma; fusion protein; tetanus neurotoxin;
 KW diphtheria toxin; TeNT; translocation domain; HN domain; DiPT; Hc;
 KW binding domain; invasion gene D protein; SigD protein.
 XX Corynebacterium diphtheriae.
 OS Clostridium tetani.
 OS Salmonella typhimurium.
 OS Unidentified.
 OS Chimeric.
 XX WO200296467-A2.
 XX 05-DEC-2002.
 XX 21-MAY-2002; 2002WO-GB002384.
 XX 24-MAY-2001; 2001GB-00012687.
 XX

PA (MICR-) MICROBIOLOGICAL RES AUTHORITY.
 XX Sutton JM, Shone CC;
 XX WPI; 2003-167247/16.
 DR Conjugate for modulating cell survival and cell growth, modulating
 XX release of inflammatory mediator from cells, comprises injected bacterial
 PT effector protein and a carrier that targets the protein to target cell.
 PT Example 12; Page 87-92; 130pp; English.
 XX The invention relates to a conjugate comprising an injected bacterial
 CC effector protein and a carrier that targets the effector protein to a
 CC target cell. Pharmaceutical composition of the invention is useful for a
 CC treatment selected from promoting or inhibiting survival of cells;
 CC preventing and reversing damage to cells; killing cells; promoting or
 CC inhibiting the growth of cells; apoptosis; release of an inflammatory
 CC mediator from cells; division of cells and treating intracellular
 CC infection and regulating nitric oxide release from cells. The invention
 CC is useful in the manufacture of a medicament for treating a neuronal
 CC cell, for intracellular infection, for interfering with intracellular
 CC trafficking, for modulating expression of cell-surface markers and for
 CC inhibiting secretion from cells. The invention is also useful for
 CC treating Prion disease, Alzheimer's disease and wide range of disorders
 CC including muscle spasms such as blepharospasm, torticollis and
 CC hypersecretion disorders such as chronic obstructive pulmonary disease
 CC (COPD), bronchitis and asthma. The present sequence is a fusion construct
 CC comprising Corynebacterium diphtheriae diphtheria toxin translocation
 CC domain (DipT-HN domain), Clostridium tetani tetanus neurotoxin binding
 CC domain (TeNT-Hc), thrombin linker peptide and Salmonella typhimurium
 CC truncated invasion gene D protein, SigD. This sequence is used in the
 CC exemplification of the invention
 XX
 SQ Sequence 1212 AA;
 Query Match 100.0%; Score 112; DB 6; Length 1212;
 Best Local Similarity 100.0%; Pred. No. 8e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 842 FNNFTVSFWLRVPKVSASHLE 862
 RESULT 208
 AAB61169
 ID AAB61169 standard; protein; 1315 AA.
 XX AAB61169;
 XX 02-APR-2001 (first entry)
 DT Clostridium tetani TeNT.
 DE Clostridium tetani.
 XX Clostridium tetani; TeNT; tetanus toxin; antibacterial; vaccine;
 XX TeNT fragment C; infection.
 XX Clostridium tetani.
 OS WO200100839-A1.
 PN 04-JAN-2001.
 PD 23-JUN-2000; 2000WO-GB002428.
 PF 25-JUN-1999; 99GB-00014861.
 PR (UNLO) IMPERIAL COLLEGE SCI TECHNOLOGY & MED.
 PA Fairweather NF, Sinha K;
 XX WPI; 2001-123014/13.
 XX
 XX New polypeptide, useful for treating infections of Clostridium tetani,
 PT comprises tetanus toxin fragment with a mutation in a loop region,
 XX Disclosure; Page 39; 43pp; English.
 XX The present sequence is given in a specification relating to a novel
 CC polypeptide comprising tetanus toxin (TeNT) fragment C or its immunogenic
 CC fragment, containing a mutation in a loop region. The mutation results in
 CC a reduction in the binding of TeNT fragment C or its immunogenic fragment
 CC to gangliosides and primary motoneurons, and/or a reduction in the
 CC ability of TeNT fragment C or its immunogenic fragment to undergo
 CC retrograde transport. The polypeptide is useful for treating, preventing
 CC and reducing the susceptibility to Clostridium tetani infection in a
 CC human or animal, and also for producing antibodies which recognise groups
 CC within TeNT polypeptides. Antibody produced against the polypeptide is
 CC also useful for treating Clostridium tetani infection
 XX
 SQ Sequence 1315 AA;
 Query Match 100.0%; Score 112; DB 4; Length 1315;
 Best Local Similarity 100.0%; Pred. No. 8.7e-10;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 FNNFTVSFWLRVPKVSASHLE 21
 DB 947 FNNFTVSFWLRVPKVSASHLE 967
 RESULT 209
 ADL90423
 ID ADL90423 standard; protein; 1315 AA.
 XX ADL90423;
 XX 17-JUN-2004 (first entry)
 DT Clostridium neurotoxin amino acid sequence SEQ ID NO:141.
 DE single chain polypeptide; clostridial neurotoxin light chain;
 XX clostridial neurotoxin heavy chain; Clostridium neurotoxin; exocytosis;
 KW antibacterial; vaccine; toxin assay; clostridial toxin; detection;
 KW botulinum; tetanus.
 XX Clostridium tetani.
 OS WO2004024909-A2.
 PN 25-MAR-2004.
 PD 12-SEP-2003; 2003WO-GB003824.
 PF 12-SEP-2002; 2002US-00241596.
 PR (HEAL-) HEALTH PROTECTION AGENCY.
 XX Shone CC, Foster KA, Chaddock J, Marks P, Sutton MJ, Stancombe P;
 PI Wayne J;
 PI WPI; 2004-270039/25.
 XX N-PSDB; ADL90422.
 DR New single chain polypeptides comprising clostridial neurotoxin light and
 PT heavy chains, useful as positive controls for toxin assays, or for
 PT developing vaccines against clostridial toxin.
 XX Disclosure; SEQ ID NO 141; 588pp; English.
 XX The present invention describes a single chain polypeptide comprising
 CC clostridial neurotoxin light and heavy chains. The single chain
 CC polypeptide comprises 2 domains: the first domain is a clostridial
 CC neurotoxin light chain, or its fragment or variant, which is capable of
 CC cleaving one or more vesicle or plasma membrane associated proteins

essential to exocytosis; the second domain is a clostridial neurotoxin heavy chain H-N portion, or its fragment or variant, which is capable of translocating the polypeptide into a cell and/or increasing the solubility of the polypeptide compared to the solubility of the first domain on its own. The second domain lacks a functional C-terminal part of a clostridial neurotoxin heavy chain, designated H-C, which renders the polypeptide incapable of binding to cell surface receptors that are the natural cell surface receptors to which native clostridial neurotoxin binds. Also described is a nucleic acid molecule encoding the single chain polypeptide described above. The single chain polypeptide has antibacterial activity, and can be used in vaccines. The single chain polypeptides can be used as positive controls for toxin assays, as reagent components for the synthesis of therapeutic molecules, or for developing vaccines against clostridial toxin. The polypeptides are also useful as non-toxic standards for the assessment and development of in vitro assays for detection of functional botulinum or tetanus neurotoxins in foodstuffs or environmental samples. The present sequence is used in the exemplification of the present invention.

Sequence 1315 AA;

Query Match 100.0%; Score 112; DB 8; Length 1315;
Best Local Similarity 100.0%; Pred. No. 8.7e-10;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSWLRVVKVSASHLE 21
Db 947 FNNFTVSWLRVVKVSASHLE 967

RESULT 210

AAB85697
ID AAB85697 standard; protein; 1807 AA.

AC AAB85697;

DT 29-OCT-2001 (first entry)

DE Recombinant protein ViVacip.

KW Multivalent protein; immune response; Plasmodium vivax; parasite;
KW protozoacide; vaccine; malaria; recombinant; ViVac1.

OS Synthetic.

OS Plasmodium vivax.

PN WO200155181-A2.

XX 02-AUG-2001.

XX 29-JAN-2001; 2001WO-US002937.

XX 31-JAN-2000; 2000US-0179213P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Lal AA, Xiao L, Zhou Z;

XX WPI; 2001-514557/56.

XX N-PSDB; AAH47058.

PT New recombinant multivalent protein comprising antigenic determinants derived from more than one stage in a life cycle of Plasmodium vivax, useful as a vaccine for treating, preventing and reducing malarial infection.

PS Claim 5; Page 39-45; 59pp; English.

XX The invention relates to recombinant multivalent proteins (I) that stimulate an immune response to Plasmodium vivax. (I) comprises antigenic determinants, fragments or conservative substitutions, derived from more than one stage in a life cycle of a Plasmodium vivax parasite. (I) is useful as a vaccine for stimulating an immune response, specifically a

CC protective immune response that confers increased resistance to infection by Plasmodium parasites, such as P. vivax. (I) is especially useful in the treatment, prevention and reduction of malarial infection, as research or diagnostic reagents for the detection of Plasmodium species in a biological sample, and for conferring immunity against multiple stages of the malarial parasite. The antibodies produced are useful for the detection or measurement of antigenic epitopes derived from one or more stages in a life cycle of a parasite, particularly P. vivax. The vaccine comprising the recombinant proteins, is cost-effective, health-promoting intervention for controlling, preventing or treating the incidence of malaria. The present sequence represents the amino acid sequence of the recombinant protein ViVacip, a multivalent and multistage vaccine against P. vivax

XX Sequence 1807 AA;

Query Match 100.0%; Score 112; DB 4; Length 1807;
Best Local Similarity 100.0%; Pred. No. 1.3e-09;
Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FNNFTVSWLRVVKVSASHLE 21
Db 841 FNNFTVSWLRVVKVSASHLE 861

RESULT 211

AAB85698

ID AAB85698 standard; protein; 2028 AA.

AC AAB85698;

DT 29-OCT-2001 (first entry)

DE Recombinant protein ViVac2p.

KW Multivalent protein; immune response; Plasmodium vivax; parasite;
KW protozoacide; vaccine; malaria; recombinant; ViVac2.

OS Synthetic.

OS Plasmodium vivax.

XX WO200155181-A2.

XX 02-AUG-2001.

XX 29-JAN-2001; 2001WO-US002937.

XX 31-JAN-2000; 2000US-0179213P.

XX (USSH) US DEPT HEALTH & HUMAN SERVICES.

XX Lal AA, Xiao L, Zhou Z;

XX WPI; 2001-514557/56.

XX N-PSDB; AAH47055.

PT New recombinant multivalent protein comprising antigenic determinants derived from more than one stage in a life cycle of Plasmodium vivax, useful as a vaccine for treating, preventing and reducing malarial infection.

PS Claim 5; Page 48-55; 59pp; English.

XX The invention relates to recombinant multivalent proteins (I) that stimulate an immune response to Plasmodium vivax. (I) comprises antigenic determinants, fragments or conservative substitutions, derived from more than one stage in a life cycle of a Plasmodium vivax parasite. (I) is useful as a vaccine for stimulating an immune response, specifically a protective immune response that confers increased resistance to infection by Plasmodium parasites, such as P. vivax. (I) is especially useful in the treatment, prevention and reduction of malarial infection, as research or diagnostic reagents for the detection of Plasmodium species in a biological sample, and for conferring immunity against multiple

CC stages of the malarial parasite. The antibodies produced are useful for
 CC the detection or measurement of antigenic epitopes derived from one or
 CC more stages in a life cycle of a parasite, particularly *P. vivax*. The
 CC vaccine comprising the recombinant proteins, is cost-effective, health-
 CC promoting intervention for controlling, preventing or treating the
 CC incidence of malaria. The present sequence represents the amino acid
 CC sequence of the recombinant protein *Vivac2p*, a multivalent and multistage
 CC vaccine against *P. vivax*

XX
 SQ Sequence 2028 AA;

Query Match 100.0%; Score 112; DB 4; Length 2028;
 Best Local Similarity 100.0%; Pred. No. 1.4e-09;
 Matches 21; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 FNNFTVSFWLRVPKVSASHLE 21
 |||||
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 Job time : 134.667 secs